Merchant documentation guide for SFCC REST Microform v2 upgrade

Contents

Step 1. Generate the server-side capture context

1. Create a custom preference to add allowed networks for flex microform.
   Refer section Create Configurations to create required configurations.

Go to **Merchant Tools** > **Site Preferences** > **Custom Preferences** > **Cybersource_FlexMicroform** and set values for the following parameters:

Field	Description	Value to Set
Enable Secure Acceptance - Flex Microform	Enable or Disable Cybersource Flex Microform Service	Yes
AllowedCardNetworks	Configure card types for Cybersource Flex Microform	VISA MASTER DISCOVER DINERSCL UB JCB MAESTRO AMEX

2. Navigate to below path and add code changes to **createFlexKey()** method

Path: cartridges/int_cybs_sfra_base/cartridge/scripts/http/payments.js

```
var allowedCNetworks =
dw.system.Site.getCurrent().getCustomPreferenceValue('Cybersource_AllowedCardNetw
orks');
    var list =[];
    if(empty(allowedCNetworks)){
        list.push('VISA'); // if no card networks are added send Visa as default

    }else{
        for (let i = 0; allowedCNetworks[i]!= null ; i++) {
            list.push(allowedCNetworks[i].value);
        }
   }

    var publicKeyRequest = {
        'targetOrigins':[
            Constants.PROXY_PREFIX + '://' + request.httpHost
        ],
        'allowedCardNetworks': list,
        'clientVersion':  Constants.CLIENT_VERSION
    };
```

3. Create constants for encryption type and client version

Path: cartridges/int_cybs_sfra_base/cartridge/apiClient/constants.js

```
  /* Flex microform constants */
  CLIENT_VERSION : "v2",
```

4. Update below code to generate capture context for microform v2

Path: cartridges/int_cybs_sfra_base/cartridge/apiClient/api/KeyGenerationApi.js

Method: this.generatePublicKey

```
return this.apiClient.callApi(
        '/microform/v2/sessions', 'POST',
        pathParams, queryParams, headerParams, formParams, postBody,
        authNames, contentTypes, accepts, returnType, callback
      );
```

5. Update ApiClient.js with below code to send response back

Path: cartridges/int_cybs_sfra_base/cartridge/apiClient/ApiClient.js

Method: CallApi method

```
if (response.ok) {
        var responseObj = response.object;
        if(path === '/microform/v2/sessions'){
            callback(responseObj, false, response);
        }else{
            callback(JSON.parse(responseObj), false, response);
        }
    } else {
        callback(response.errorMessage, response.error, response);
    }
```

Step 2: Decode and Validate Capture Context

1. Update controller with below code to call script and render template with required information.

Path: cartridges/int_cybs_sfra_base/cartridge/controllers/SecureAcceptance.js

```
server.get('CreateFlexToken', server.middleware.https, function (req, res, next)
{
        var Flex = require('~/cartridge/scripts/http/payments');
        var flexResult = Flex.createFlexKey(); // call to create capture context
        var parsedPayload = Flex.jwtDecode(flexResult);  // parse capture context
and validate public key
        if(parsedPayload != null){  // extract client library as clientLibrary
integrity values from capture context
```

```
            var clientLibrary = parsedPayload.ctx[0].data.clientLibrary;
            var clientLibraryIntegrity =
parsedPayload.ctx[0].data.clientLibraryIntegrity;
            res.render('secureAcceptanceFlexMicroformContent', { // add client
library and client library integrity values dynamically
                flexTokenResult: flexResult,
                clientLibrary: clientLibrary,
                clientLibraryIntegrity: clientLibraryIntegrity
            });
            next();
        }
    });
```

2. Decode capture context:

Path: cartridges\int_cybs_sfra_base\cartridge\scripts\http\payments.js

```
// function to decode capture context and validate capture context using the
public key
function jwtDecode(jwt){
    var captureContext = jwt;
    var Encoding = require('dw/crypto/Encoding');
    var Signature = require('dw/crypto/Signature');
    var Bytes = require('dw/util/Bytes');

    var apiSig = new Signature();
    var encodedHeader = captureContext.split('.')[0];
    var encodedPayload = captureContext.split('.')[1];
    var jwtSignature = captureContext.split('.')[2];

    var kid = JSON.parse(Encoding.fromBase64(encodedHeader)).kid ;
    var alg = JSON.parse(Encoding.fromBase64(encodedHeader)).alg;
    var decodedPayload = Encoding.fromBase64(encodedPayload).toString();
    var parsedPayload = JSON.parse(decodedPayload);
    var decodedJwt = null ;

    // generate public key using the kid from capture context
    var pKid = getPublicKey(kid);

    // Create public key using modulus and exponent value to validate capture
context
    var pkey = require('../http/publicKey');

    if(!empty(pKid.n) && !empty(pKid.e)){
        var RSApublickey = pkey.getRSAPublicKey(pKid.n, pKid.e);
        var JWTAlgoToSFCCMapping = {
            RS256 : "SHA256withRSA",
            RS512 : "SHA512withRSA",
            RS384 : "SHA384withRSA",
        };
        // validate capture context using the generated public key
        var jwtSignatureInBytes = new Encoding.fromBase64(jwtSignature);
        var contentToVerify = encodedHeader + '.' + encodedPayload;
        contentToVerify = new Bytes(contentToVerify);
        var isValid = apiSig.verifyBytesSignature(jwtSignatureInBytes,
contentToVerify , new Bytes(RSApublickey) ,JWTAlgoToSFCCMapping[alg]) ;
        if(isValid){
            decodedJwt = parsedPayload;
        }
    }
    return decodedJwt;
}
```

```
// Add below method to get public key by passing kid (extracted from capture
context)

function getPublicKey(kid){
    var cybersourceRestApi = require('../../apiClient/index');
    var instance = new
cybersourceRestApi.AsymmetricKeyManagementApi(configObject);
    var jwk = '';
    instance.getP12KeyDetails(kid, function (data, error, response) {
        jwk = data;
    })
    return jwk;
}
```

3. Update below code to generate public key

Path: cartridges/int_cybs_sfra_base/cartridge/apiClient/api/AsymmetricKeyManagementApi.js
Method: this.getP12KeyDetails

```
var accepts = ['application/json'];

return this.apiClient.callApi(
        '/flex/v2/public-keys/{keyId}', 'GET',
        pathParams, queryParams, headerParams, formParams, postBody,
        authNames, contentTypes, accepts, returnType, callback
      );
```

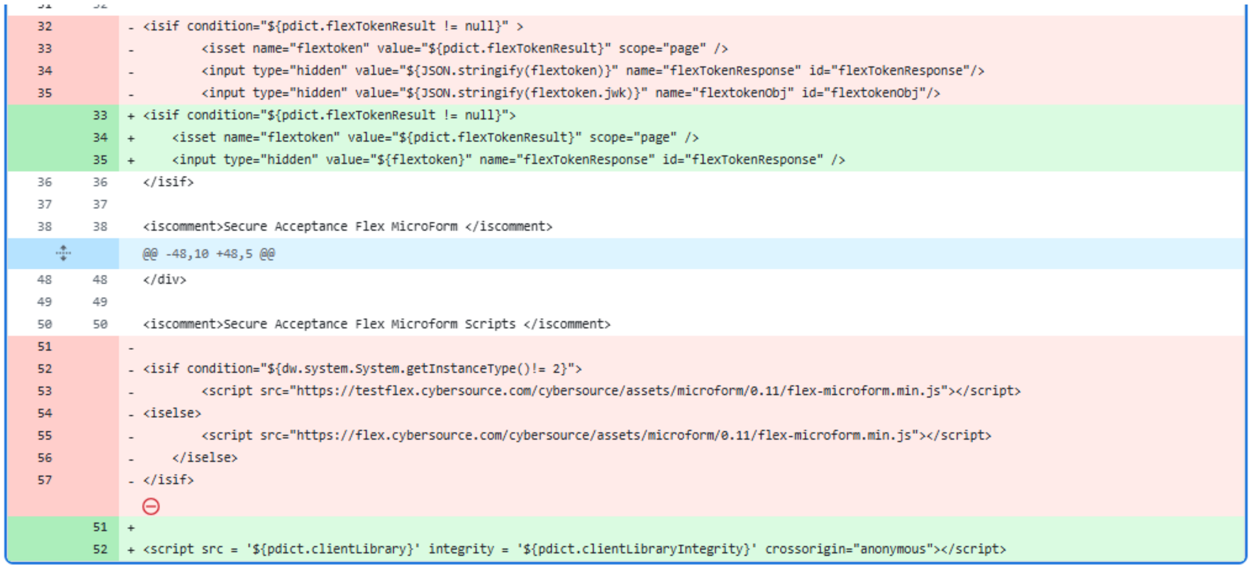
4. Navigate to the path below in our cartridge and add this file to your custom cartridge. This will create a public key which is used to validate our capture context

Path: cartridges/int_cybs_sfra_base/cartridge/scripts/http/publicKey.js

Step 3: Add clientLibrary and clientLibraryIntegrity values

Update **secureAcceptanceFlexMicroformContent.isml file** as per the screenshot attached below.

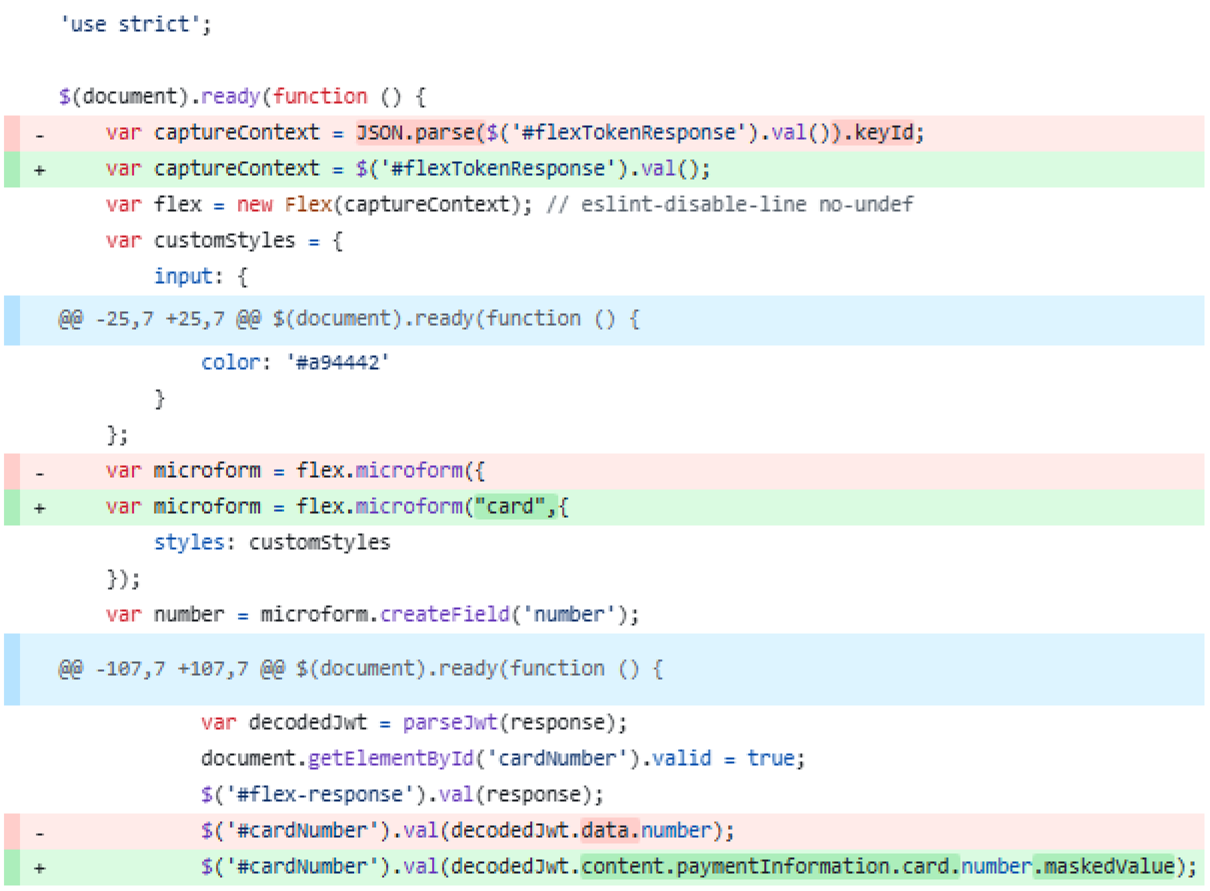
Path: cartridges\int_cybs_sfra\cartridge\templates\default\secureAcceptanceFlexMicroformContent.isml



```
- <isif condition="${pdict.flexTokenResult != null}" >
-         <isset name="flextoken" value="${pdict.flexTokenResult}" scope="page" />
-         <input type="hidden" value="${JSON.stringify(flextoken)}" name="flexTokenResponse" id="flexTokenResponse"/>
-         <input type="hidden" value="${JSON.stringify(flextoken.jwk)}" name="flextokenObj" id="flextokenObj"/>
+ <isif condition="${pdict.flexTokenResult != null}">
+     <isset name="flextoken" value="${pdict.flexTokenResult}" scope="page" />
+     <input type="hidden" value="${flextoken}" name="flexTokenResponse" id="flexTokenResponse" />
  </isif>

  <iscomment>Secure Acceptance Flex MicroForm </iscomment>
@@ -48,10 +48,5 @@
  </div>

  <iscomment>Secure Acceptance Flex Microform Scripts </iscomment>
-
- <isif condition="${dw.system.System.getInstanceType()!= 2}">
-         <script src="https://testflex.cybersource.com/cybersource/assets/microform/0.11/flex-microform.min.js"></script>
- <iselse>
-         <script src="https://flex.cybersource.com/cybersource/assets/microform/0.11/flex-microform.min.js"></script>
-     </iselse>
- </isif>

+
+ <script src = '${pdict.clientLibrary}' integrity = '${pdict.clientLibraryIntegrity}' crossorigin="anonymous"></script>
```

Step 4: Load flex IFrame

Path: cartridges\int_cybs_sfra\cartridge\client\default\custom\flexMicroform.js



```diff
 'use strict';

 $(document).ready(function () {
-     var captureContext = JSON.parse($('#flexTokenResponse').val()).keyId;
+     var captureContext = $('#flexTokenResponse').val();
      var flex = new Flex(captureContext); // eslint-disable-line no-undef
      var customStyles = {
          input: {
@@ -25,7 +25,7 @@ $(document).ready(function () {
              color: '#a94442'
          }
      };
-     var microform = flex.microform({
+     var microform = flex.microform("card",{
          styles: customStyles
      });
      var number = microform.createField('number');
@@ -107,7 +107,7 @@ $(document).ready(function () {
              var decodedJwt = parseJwt(response);
              document.getElementById('cardNumber').valid = true;
              $('#flex-response').val(response);
-             $('#cardNumber').val(decodedJwt.data.number);
+             $('#cardNumber').val(decodedJwt.content.paymentInformation.card.number.maskedValue);
```

Step 5: Replace diners-club with dinersclub

Replace all the occurrences of **diners-club** with **dinersclub** in below files.

Path:

- **cartridges/int_cybs_sfra/cartridge/client/default/custom/flexMicroform.js**
- **cartridges/int_cybs_sfra/cartridge/client/default/scss/components/_creditCardField.scss**
- **cartridges/int_cybs_sfra_base/cartridge/scripts/hooks/payment/processor/payments_credit_form_processor.js**

Step 6: Create Configurations

Add below lines of code in FlexMicroform.xml and merged.xml files

Path:

- **metadata\payments_metadata\meta\merged.xml**
- **metadata\payments_metadata\meta\FlexMicroform.xml**

```xml
<attribute-definition attribute-id="Cybersource_AllowedCardNetworks">
                <display-name xml:lang="x-default">allowedCardNetworks</display-
name>
```

```
                <description xml:lang="x-default">Configure card types for 
Cybersource Flex Microform</description>
                <type>enum-of-string</type>
                <mandatory-flag>false</mandatory-flag>
                <externally-managed-flag>false</externally-managed-flag>
                <select-multiple-flag>true</select-multiple-flag>
                <value-definitions>
                    <value-definition default="true">
                        <display xml:lang="x-default">VISA</display>
                        <value>VISA</value>
                    </value-definition>
                    <value-definition>
                        <display xml:lang="x-default">MAESTRO</display>
                        <value>MAESTRO</value>
                    </value-definition>
                    <value-definition>
                        <display xml:lang="x-default">MASTERCARD</display>
                        <value>MASTERCARD</value>
                    </value-definition>
                    <value-definition>
                        <display xml:lang="x-default">AMEX</display>
                        <value>AMEX</value>
                    </value-definition>
                    <value-definition>
                        <display xml:lang="x-default">DISCOVER</display>
                        <value>DISCOVER</value>
                    </value-definition>
                    <value-definition>
                        <display xml:lang="x-default">DINERSCLUB</display>
                        <value>DINERSCLUB</value>
                    </value-definition>
                    <value-definition>
                        <display xml:lang="x-default">JCB</display>
                        <value>JCB</value>
                    </value-definition>
                </value-definitions>
            </attribute-definition>
```

```
<group-definitions>
           <attribute-group group-id="Cybersource_FlexMicroform">
                <attribute attribute-id="Cybersource_AllowedCardNetworks"/>
            </attribute-group>
 </group-definitions>
```