

# **Cybersource B2C Commerce - SOAP Authentication Guide**

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## Introduction

This document provides a step-by-step guide for managing P12 certificates and code changes for MLE implementation without upgrading the cartridge. Also includes the changes in configuration to make it general for both Authentication and MLE. Additionally, it outlines the essential code modifications required to ensure seamless integration and functionality.

Message-Level Encryption (MLE) enables you to store information or communicate with other parties while helping to prevent uninvolved parties from understanding the stored information. MLE is optional and supported only for payments services.

Meta key is a specialized API key that a portfolio or merchant account user can create for the purposes of processing transactions on behalf of multiple of their transacting MID accounts. Meta keys are useful for organizations whose transacting MID users do not manage or store their own individual API keys. Instead of having to create and assign a unique API key for each of your transacting MIDs, you can create and assign a single meta key to dozens or hundreds of your transacting MIDs simultaneously.

## 1. Merchants using ENT cartridge v21.1.0 and above

### 1.1.Steps for managing P12 certificate

Below are the steps to generate a P12 file or meta key and managing it.

#### Step 1: Create P12 file

*Option 1: Create a p12 key.*

We can use p12 key generated for a specific MID from which it is created.

1. Follow steps mentioned in the [link](#) to generate a P12 certificate in Business Center.
2. Make a note of password set to the P12 key.
3. Download the generated P12 file.

*Option 2: Create Meta Key.*

We can assign a single meta key to dozens or hundreds of transacting MIDs simultaneously.

1. Follow steps mentioned in the [link](#) to generate a meta key from Business Center.
2. Make a note of password set to the meta key.
3. Download the generated p12 file.

#### Step 2: Place the Keystore file in Business Manager for SOAP Authentication

- Login to Business Manager and Navigate to Administration > Operations > Private Keys and Certificates.
- Click on Import and select the p12 file generated in [Step1](#).
- Add Alias to the p12 key. Make note of the alias and use it for custom preference CsAuth\_Alias

- Enter Source password used while generating the p12.
- Click on Save.

### Step 3: Import .crt to Business Manager for MLE

- Run below openssl command to extract the certificate from p12 file generated in [Step1](#).  
openssl pkcs12 -in yourfile.p12 -cacerts -nokeys -out certificate.crt
- Login to Business Manager and Navigate to Administration > Operations > Private Keys and Certificates.
- Click on Import and select the .crt file generated in above step.
- Add an Alias to the certificate imported. Make note of the alias and use it for custom preference CsMLE\_Alias
- Click on Save

**Note:** If we try importing multiple certificates with same content of different CyberSource MID's then Salesforce throws an error stating that the certificate already exists with a different alias. We can use the same certificate for multiple mid's

### Step 4: Configurations in Business Manager

Refer section [Metadata changes to create configurations](#) to create required configurations.

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

Field	Description
Cybersource Merchant ID	Cybersource Merchant ID (mention the merchant ID not the account or portfolio id)
CsAuth_Alias	Alias specified for p12 file imported in Business Manager in <a href="#">Step2</a> for Authentication.
CsMLE_Enabled	Enable or Disable Message-Level Encryption as mentioned in <a href="#">Step3</a> .
CsMLE_Alias	Alias of the certificate imported to Business Manager in <a href="#">Step3</a> .

#### MLE Enabled

If you are opting for MLE, please follow [step3](#) to extract and import certificate from p12 file. Refer to the below example

Refer to the below example.

```

Certificate:
  Data:
    Version: 3 (0x2)
    Serial Number:
      31:36:39:30:33:39:39:32:39:36:34:31:31:30:31:38:37:32:34:33:30:33
    Signature Algorithm: sha256WithRSAEncryption
    Issuer: C = US, O = Visa, OU = CyberSource, CN = CyberSource Transactional Test Issuing CA
    Validity
      Not Before: Jul 26 19:21:37 2023 GMT
      Not After : Jul 26 19:21:37 2026 GMT
    Subject: CN = CyberSource_SJC_US, serialNumber = 1690399296411018724303
    Subject Public Key Info:
      Public Key Algorithm: rsaEncryption
      Public-Key: (2048 bit)
      Modulus:
        00:b2:bf:1e:e3:45:ac:d3:fd:9f:d6:74:1a:c5:0b:
        b8:2a:d8:96:87:ff:70:00:33:74:fa:8e:c3:92:c9:
        cd:d3:ee:7c:4d:c6:0b:4e:e1:a7:43:e7:82:f3:81:
        6c:a6:bc:68:43:91:11:14:da:67:66:94:c3:8e:ac:
        89:8d:07:18:20:62:5e:cc:43:f0:6d:83:aa:16:03:
        41:15:c1:6e:4b:bf:4c:39:46:66:5f:c4:c1:12:20:
        be:27:b5:68:af:9b:ed:0f:60:6c:bc:94:c2:46:5b:
        23:be:b9:9c:84:76:89:b9:2c:18:99:11:94:3d:28:
        77:bf:1e:38:33:df:89:5a:bb:95:86:c2:d0:c7:1a:
        24:65:59:2e:b4:21:01:6b:99:91:ae:bc:0b:d5:dc:
        ef:6c:4c:bb:1c:63:ec:55:90:d5:25:79:69:67:22:
        1f:22:a1:1c:94:07:75:0a:79:7d:d2:b6:d1:9e:16:
        9f:9d:71:74:2d:0e:81:2a:f2:68:0d:4b:2f:41:31:
        43:f7:a7:b1:26:05:8e:29:4f:5e:e3:c9:fe:dc:c9:
        eb:0b:ad:2e:62:df:05:7b:e8:ae:06:02:6e:22:46:
  
```

Alias of the private key for Authentication

(CsAuth\_Alias)  
(String)

Alias of the private key In Private Keys  
and Certificates for Authentication

wlproltd\_p12

Alias of the private key In Private Keys and Certificates for Authentication

Enable Message-Level Encryption

(CsMLE\_Enabled)  
Enable or Disable Message-Level  
Encryption

Yes

No

Enable or Disable Message-Level Encryption

Alias of the certificate for MLE


(CsMLE\_Alias)  
(String)

wlproltd\_crt

Alias of the certificate In Private Keys and Certificates for MLE

Administration / Operations /

### Private Keys and Certificates ?

Search for alias or hostname... 

Delete

<input type="checkbox"/> Alias	Hostnames	Type	Valid From	Valid To	Import Date
<input type="checkbox"/> soon_expired_crt		Trusted Certificate	9/17/2025	9/18/2025	9/17/2025
<input type="checkbox"/> soon_expired_p12		Private Key	9/17/2025	9/18/2025	9/17/2025
<input type="checkbox"/> wiproldt.crt		Trusted Certificate	7/26/2023	7/26/2026	9/18/2025
<input type="checkbox"/> wiproldt_p12		Private Key	11/21/2024	11/21/2026	9/18/2025

## 1.2.Code changes for MLE

Step 1: Changes to read the newly added configurations from Business Manager

Make the following changes to **libCybersource.js** file.

Path: “cartridges/int\_cybersource\_sfra/cartridge/scripts/cybersource/libCybersource.js”

1. Add the following functions to read the new configurations in “CybersourceHelper” object.

```
isMLEEnabled: function () {
    return Site.getCurrent().getCustomPreferenceValue('CsMLE_Enabled');
},

getAliasForMLE: function () {
    return Site.getCurrent().getCustomPreferenceValue('CsMLE_Alias');
},
```

2. Add the following changes to existing configurations for Authentication.

```
getAliasForSignature: function () {
    return Site.getCurrent().getCustomPreferenceValue('CsAuth_Alias');
},
```

Refer the following screenshot:

```
var CybersourceHelper = {

    getcsReference: function() {
-       var wsdlName = Site.getCurrent().getCustomPreferenceValue('CsKeystore_Name');
-       var webref = webreferences2[wsdlName];
+       var webref = webreferences2["CyberSourceTransaction"];
        return webref;
    },
}
```

```

1 200     getMerchantID: function () {
2 201         return Site.getCurrent().getCustomPreferenceValue('CsMerchantId');
3 202     },
4 203
5 -     getKeystorePassword: function () {
6 -         return Site.getCurrent().getCustomPreferenceValue('CsKeystore_Password');
7 -     },
8 -
9 204     getAliasForSignature: function () {
10 205         return Site.getCurrent().getCustomPreferenceValue('CsAuth_Alias');
11 206     },
12 @@ -214,12 +209,8 @@ var CybersourceHelper = {
13 209         return Site.getCurrent().getCustomPreferenceValue('CsMLE_Enabled');
14 210     },
15 211
16 -     getAliasForMLEinJKSfile: function () {
17 -         return Site.getCurrent().getCustomPreferenceValue('CsJKS_MLEAlias');
18 -     },
19 -
20 -     getKeystoreTypeForAuthentication: function () {
21 -         return Site.getCurrent().getCustomPreferenceValue('CsAuth_KeystoreType');
22 212 +     getAliasForMLE: function () {
23 213 +         return Site.getCurrent().getCustomPreferenceValue('CsMLE_Alias');
24 214     },
25 215
26 216     getklarnaPrivateKeyAlias: function() {
27 @@ -235,7 +226,7 @@ var CybersourceHelper = {
28 226     },

```

## Step 2: Changes in SoapServiceInit.js file

Path: “cartridges/int\_cybersource\_sfra/cartridge/scripts/init/SoapServiceInit.js”

Replace the existing `execute()` method with the following method in “CyberSourceTransactionService” service.

```

execute: function (svc, parameter) {
    var WSU_NS = "http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-utility-1.0.xsd";
    var libCybersource =
require('*/cartridge/scripts/cybersource/libCybersource');
    var CybersourceHelper = libCybersource.getCybersourceHelper();
    var aliasForSignature = CybersourceHelper.getAliasForSignature();

    var aliasForEncryption = CybersourceHelper.getAliasForMLE();
    var isMLEEnabled = CybersourceHelper.isMLEEnabled();

    var secretsMap = new HashMap();

    //request-config
    var requestCfg = new HashMap();

```

```

    if (isMLEEnabled) {
        requestCfg.put(WSUtil.WS_ACTION, WSUtil.WS_TIMESTAMP + " " +
WSUtil.WS_SIGNATURE + " " + WSUtil.WS_ENCRYPT);
        // define encryption properties
        requestCfg.put(WSUtil.WS_ENCRYPTION_USER, aliasForEncryption);
        requestCfg.put(WSUtil.WS_ENC_PROP_KEYSTORE_TYPE, "managed");
        requestCfg.put(WSUtil.WS_ENC_PROP_KEYSTORE_ALIAS,
aliasForEncryption);
        requestCfg.put(WSUtil.WS_ENC_KEY_ID,
WSUtil.KEY_ID_TYPE_X509_KEY_IDENTIFIER);

        requestCfg.put(
            WSUtil.WS_ENCRYPTION_PARTS,
            "{Element}{ " +
            WSU_NS +
            "}Timestamp;" +
            "{Content}{http://schemas.xmlsoap.org/soap/envelope/}Body",
        );
    }
    else {
        requestCfg.put(WSUtil.WS_ACTION, WSUtil.WS_TIMESTAMP + " " +
WSUtil.WS_SIGNATURE);
    }
    requestCfg.put(WSUtil.WS_SIGNATURE_USER, alisForSignature);
    requestCfg.put(WSUtil.WS_PASSWORD_TYPE, WSUtil.WS_PW_TEXT);
    requestCfg.put(WSUtil.WS_SIG_DIGEST_ALGO,
"http://www.w3.org/2001/04/xmldsig#sha256");

    // define signature properties
    requestCfg.put(WSUtil.WS_SIG_PROP_KEYSTORE_TYPE, "managed");
    requestCfg.put(WSUtil.WS_SIG_PROP_KEYSTORE_ALIAS, alisForSignature);
    requestCfg.put(WSUtil.WS_SIGNATURE_PARTS,
"{Element}{http://schemas.xmlsoap.org/soap/envelope/}Body");
    requestCfg.put(WSUtil.WS_SIG_KEY_ID,
WSUtil.KEY_ID_TYPE_DIRECT_REFERENCE);

    requestCfg.put(WSUtil.WS_SECRETS_MAP, secretsMap);

    //response-config
    var responseCfg = new HashMap();
    responseCfg.put(WSUtil.WS_ACTION, WSUtil.WS_TIMESTAMP);

```



```

    WSUtil.setWSSecurityConfig(svc.serviceClient, requestCfg, responseCfg);
// Setting WS security
    return svc.serviceClient.runTransaction(parameter.request);
},

```

### Step 3: Metadata changes to create configurations

1. Make changes to “metadata/sfra\_meta/meta/Cybersource.xml” file:

Add these new configurations code in **<custom-attribute-definitions>** element of the xml.

```

<attribute-definition attribute-id="CsMLE_Enabled">
    <display-name xml:lang="x-default">Enable Message-Level
Encryption</display-name>
    <description xml:lang="x-default">Enable or Disable Message-Level
Encryption</description>
    <type>boolean</type>
    <mandatory-flag>>false</mandatory-flag>
    <externally-managed-flag>>false</externally-managed-flag>
    <default-value>>false</default-value>
</attribute-definition>
<attribute-definition attribute-id="CsMLE_Alias">
    <display-name xml:lang="x-default"> Alias of the certificate in Private
Keys and Certificates for MLE </display-name>
    <description xml:lang="x-default"> Alias of the certificate in Private
Keys and Certificates for MLE </description>
    <type>string</type>
    <mandatory-flag>>false</mandatory-flag>
    <externally-managed-flag>>false</externally-managed-flag>
    <min-length>0</min-length>
</attribute-definition>

```

If you do not have the old configurations (v24.1.3), you can directly add the new ones with the code below.

```

<attribute-definition attribute-id="CsAuth_Alias">
    <display-name xml:lang="x-default"> >Alias of the certificate for
Authentication </display-name>
    <description xml:lang="x-default"> >Alias of the certificate for
Authentication </description>
    <type>string</type>
    <mandatory-flag>>false</mandatory-flag>
    <externally-managed-flag>>false</externally-managed-flag>
    <min-length>0</min-length>
</attribute-definition>

```

Replace the following **<group-definitions>** with the existing one.

```

<group-definitions>
    <attribute-group group-id="CyberSource">

```

```
<display-name xml:lang="x-default">CyberSource: Core</display-name>
<attribute attribute-id="IsCartridgeEnabled" />
<attribute attribute-id="CsMerchantId" />
<attribute attribute-id="CsEndpoint" />
<attribute attribute-id="CsDeveloperID" />
<attribute attribute-id="CsDebugCybersource" />
<attribute attribute-id="csMasterCardAuthIndicator" />
<attribute attribute-id="CsAuth_Alias" />
<attribute attribute-id="CsMLE_Enabled" />
<attribute attribute-id="CsMLE_Alias" />
</attribute-group>
</group-definitions>
```

2. Add the below code in "metadata/sfra\_meta/sites/Refarch/preferences.xml" file

```
<preference preference-id="CsMLE_Enabled">false</preference>
<preference preference-id="CsMLE_Alias"></preference>
<preference preference-id="CsAuth_Alias">merchantid</preference>
```

## 2. Merchants using Site Genesis cartridge v21.1.0 and above

Merchants using Site Genesis cartridge v21.1.0 and above can follow the steps mentioned in [section 1](#).

**NOTE:** When referring to any file, use the path 'cartridges/int\_cybersource/' instead of 'cartridges/int\_cybersource\_sfra/'."s

## 3. Merchants using cartridge version older than v21.1.0

We strongly recommend merchants using older versions of our cartridge to upgrade to our latest cartridge version as the older version contains deprecated packages and methods which may not be compatible with our latest changes.

However, please follow the steps below to update required files to use p12 authentications and MLE.

### Step 1: Update folder name from webreference to webreferences2.

Change all the references of webreference to webreferences2 in our cartridge.

**Step 2: Add below changes to SoapServiceInit.js**

```

30 ...cartridge/scripts/init/SoapServiceInit.ds → ...cartridge/scripts/init/SoapServiceInit.js
@@ -6,7 +6,7 @@
6 6 /*****
7 7 var dwsvc = require ("dw/svc");
8 8 var HashMap = require ("dw/util/HashMap");
9 9 - var SOAPUtil = require ("dw/rpc/SOAPUtil");
10 10 + var WSUtil = require ('dw/ws/WSUtil');
11 11 var LocalServiceRegistry = require('dw/svc/LocalServiceRegistry');
11 11 /**

```

The SOAPUtil class is deprecated. Replace it with WSUtil. Replace the execute() function of “CyberSourceTransactionService” with below code snippet.

```

execute: function (svc, parameter) {

    var WSU_NS = "http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-utility-1.0.xsd";

    var libCybersource =
require('*/cartridge/scripts/cybersource/libCybersource');

    var CybersourceHelper = libCybersource.getCybersourceHelper();

    var alisForSignature = CybersourceHelper.getAliasForSignature();

    var aliasForEncryption = CybersourceHelper.getAliasForMLE();

    var isMLEEnabled = CybersourceHelper.isMLEEnabled();

    var secretsMap = new HashMap();

    //request-config
    var requestCfg = new HashMap();

    if (isMLEEnabled) {

```

```

        requestCfg.put(WSUtil.WS_ACTION, WSUtil.WS_TIMESTAMP + " " +
WSUtil.WS_SIGNATURE + " " + WSUtil.WS_ENCRYPT);

        // define encryption properties

        requestCfg.put(WSUtil.WS_ENCRYPTION_USER, aliasForEncryption);

        requestCfg.put(WSUtil.WS_ENC_PROP_KEYSTORE_TYPE, "managed");

        requestCfg.put(WSUtil.WS_ENC_PROP_KEYSTORE_ALIAS,
aliasForEncryption);

        requestCfg.put(WSUtil.WS_ENC_KEY_ID,
WSUtil.KEY_ID_TYPE_X509_KEY_IDENTIFIER);

        requestCfg.put(
            WSUtil.WS_ENCRYPTION_PARTS,
            "{Element}{" +
            WSU_NS +
            "}Timestamp;" +
            "{Content}{http://schemas.xmlsoap.org/soap/envelope/}Body",
        );
    }
    else {
        requestCfg.put(WSUtil.WS_ACTION, WSUtil.WS_TIMESTAMP + " " +
WSUtil.WS_SIGNATURE);
    }

    requestCfg.put(WSUtil.WS_SIGNATURE_USER, alisForSignature);

    requestCfg.put(WSUtil.WS_PASSWORD_TYPE, WSUtil.WS_PW_TEXT);

    requestCfg.put(WSUtil.WS_SIG_DIGEST_ALGO,
"http://www.w3.org/2001/04/xmlenc#sha256");

```

```
// define signature properties

requestCfg.put(WSUtil.WS_SIG_PROP_KEYSTORE_TYPE, "managed");

requestCfg.put(WSUtil.WS_SIG_PROP_KEYSTORE_ALIAS, aliasForSignature);

requestCfg.put(WSUtil.WS_SIGNATURE_PARTS,
"{Element}{http://schemas.xmlsoap.org/soap/envelope/}Body");

requestCfg.put(WSUtil.WS_SIG_KEY_ID,
WSUtil.KEY_ID_TYPE_DIRECT_REFERENCE);

requestCfg.put(WSUtil.WS_SECRETS_MAP, secretsMap);

//response-config
var responseCfg = new HashMap();

responseCfg.put(WSUtil.WS_ACTION, WSUtil.WS_TIMESTAMP);

WSUtil.setWSSecurityConfig(svc.serviceClient, requestCfg, responseCfg);
// Setting WS security

return svc.serviceClient.runTransaction(parameter.request);
},
```

**Step 3:** Please refer to below screenshots and make changes in libCybersource.js

## Cybersource B2C Commerce - SOAP Authentication Guide

```
278 -
279 483     setEndpoint: function (service) {
280 484         var endpoint = CybersourceHelper.getEndpoint();
281 485         var Logger = dw.system.Logger.getLogger('Cybersource');
282 486         Logger.debug('Connection to system "{0}"', endpoint);
283 -         var Stub = require('dw/rpc/Stub');
284 -
285 +         var Port = require('dw/ws/Port');
286 +         var WSUtil = require('dw/ws/WSUtil');
287 +         switch (endpoint) {
288 489             case 'Production':
289 490                 service._setProperty(Stub.ENDPOINT_ADDRESS_PROPERTY, 'https://ics2wsa.ic3.com/commerce/1.x/transactionProcessor');
290 491                 WSUtil.setProperty(Port.ENDPOINT_ADDRESS_PROPERTY, 'https://ics2wsa.ic3.com/commerce/1.x/transactionProcessor', service);
291 492                 break;
292 493             case 'Test':
293 494                 service._setProperty(Stub.ENDPOINT_ADDRESS_PROPERTY, 'https://ics2wstesta.ic3.com/commerce/1.x/transactionProcessor');
294 495                 WSUtil.setProperty(Port.ENDPOINT_ADDRESS_PROPERTY, 'https://ics2wstesta.ic3.com/commerce/1.x/transactionProcessor', service);
295 496                 break;
296 497             default:
297 498                 // eslint-disable-next-line
298 499                 throw 'Undefined Cybersource Endpoint "' + endpoint + '"';
299 500         }
300 501     },
301 502 },
302 503 },
303 504 },
304 505 },
305 506 },
306 507 },
307 508 },
308 509 },
309 510 },
310 511 },
311 512 },
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