**CyberSource Storefront Reference Architecture LINK Cartridge 3DS2.X - Developer Guide**

***Upgrading from Version 19.2.X to Version******19.3.0***

A picture containing clock, drawing

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# CyberSource Cartridge Overview

**NOTE:** If you are integrating CyberSource with a controller or pipeline version of Site Genesis, please disregard this document, and refer to the corresponding integration guide for your version of Site Genesis.

The CyberSource package contains four cartridges.

1. A core cartridge (**int\_cybersource**) that contains core API integrations, this includes:
   * 1. The building and handling of API requests,
     2. Parsing responses into objects usable by the storefront.
2. Two legacy architecture cartridges (**int\_cybersource\_pipelines, int\_cybersource\_controllers**) each
   * 1. contain sets of wrappers that connect the core code to their respective SFCC platforms.
3. From Version 18.1 and higher of the CyberSource cartridge package adds a fourth cartridge (**int\_cybersource\_sfra/ LINK\_cybersource**). This combines a modified version of the core code that exists in the **int\_cybersource**, along with the necessary hooks, extensions, and wrappers to connect this code to the SFRA storefront. When integrating CyberSource with SFRA, you should only upload the LINK\_cybersource cartridge to your workspace and storefront. The remaining three cartridges are not utilized in this integration and can be ignored. The following pages describe the high-level architecture of the SFRA CS Architecture, along with details regarding specific Integrations.

# Installation Guide

Refer Cartridge Integration guide (**Cybersource Cartridge Integration SFRA vxx\_x\_x.docx**) included in the cartridge for the detail steps to install the cartridge.

# Payer Authentication

*Integration Overview*

The CyberSource LINK Cartridge 19.3.0 provides support for the latest 3D Secure 2.x specification. Upgrading your Payer Authentication integration from the legacy 3D Secure 1.0 specification to 2.x will allow for better authentication rates from issuers and meet PSD2 regulatory requirements for Strong Customer Authentication (SCA) in Europe.

The following is a high-level architectural diagram of how the Payer Authentication integration works:

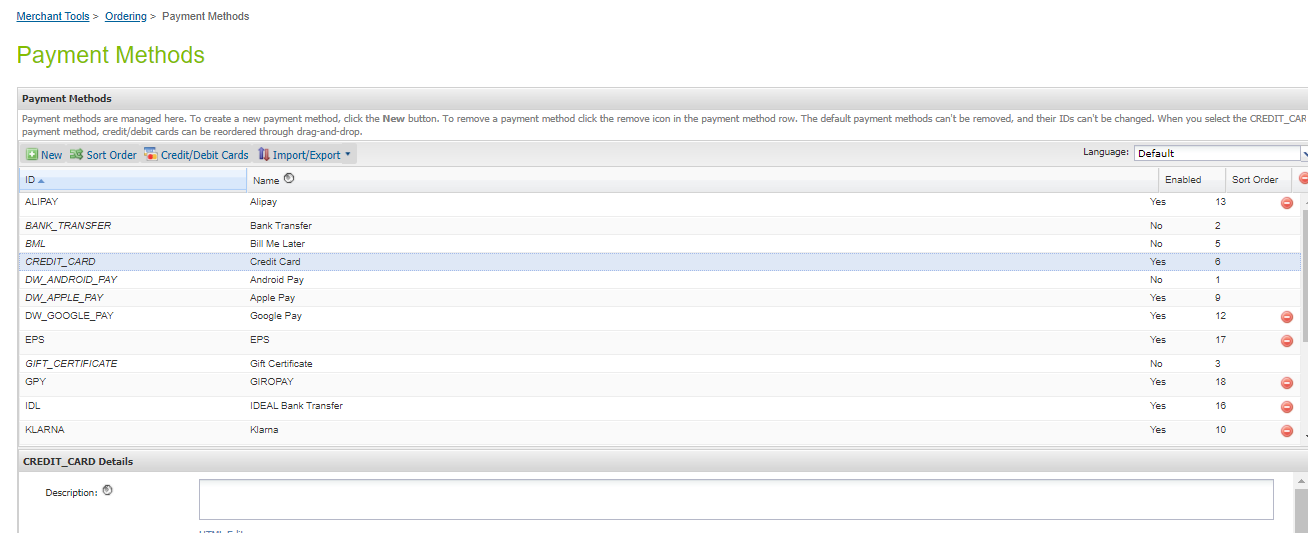
Chart, waterfall chart

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*Implementation for upgrade to 3DS2.x*

To enable Payer Authentication services on SFRA, ensure you have followed all steps in the " Cybersource Cartridge Integration SFRA vXX\_X\_X" guide.

**Prerequisite** Please contact your Cybersource Representative to sign up and receive your Payer Authentication credentials.

1. Import ‘int\_cybersource\_sfra/configuration/CS SFRA PaymentMethods vXX\_X.xml’, ‘configuration/PayerAuth-Meta.xml’ into your sandbox.
2. Login to SFCC’s Business Manager and go to 'Merchant Tools > Ordering > Payment Methods'. Make sure the 'CREDIT\_CARD' payment method is enabled and configured to use the CYBERSOURCE\_CREDIT payment processor.  
   
3. On the same page, select 'Credit/Debit cards' and check the payer authentication checkbox on any credit card types you want to support Payer Authentication.

Graphical user interface, text, application, email

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1. Go to 'Merchant Tools > Custom Preferences > CyberSource Core in Business Manager, fill following Preferences.

**Site Preference Group: CyberSource Core**

|  |  |
| --- | --- |
| Preference Name | Usage |
| CS PA Merchant ID | Payer Auth merchant ID |
| CS PA Save Proof.xml | To enable/disable saving of proof.xml in order object |
| CS PA Save ParesStatus | Default False  Save ParesStatus received as response from Pa Authenticate request and send it as param in ccAuth request call. This field should be enabled after verifying cybersource merchant account settings |

1. Go to 'Merchant Tools > Custom Preferences > CruiseCredentials in Business Manager, fill following Preferences.

**Site Preference Group: CruiseCredentials**

|  |  |
| --- | --- |
| Preference Name | Usage |
| CruiseApiKey | A shared secret value between the merchant and Cardinal. This value should never be exposed to the public. |
| CruiseApiIdentifier | GUID used to identify the specific API Key |
| CruiseMerchantName | Merchant Name |
| CruiseOrgUnitId | GUID to identify the merchant organization within Cardinal systems |
| CardinalCruiseApiPath | Songbird.js script API path |

*Test Cases for 3D Secure 2.x*

<https://developer.cybersource.com/library/documentation/dev_guides/Payer_Authentication_SO_API/html/Topics/Test_Cases_for_3D_Secure_2_x.htm>

# Change Logs

|  |  |  |
| --- | --- | --- |
| Action | File Name | Description |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/client/default/js/checkout.js | Removed inclusion of "secureAcceptance" in document.ready |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/client/default/js/checkout/billing.js | changed existing logic for appending class to 'submit-order' id element based on payment instrument |
| D | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/client/default/js/checkout/cybersource/secureAcceptance.js | removed as existing logic moved to cybersource-custom.js with some modifications. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/controllers/Checkout.js | Begin method modified to send paymentClass required for submit-order button based on the paymentInstrument |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/controllers/CheckoutServices.js | 1.SilentPostAuthorize method is added to handle authorization of SA SilentPost. 2.In PlaceOrder method DFReferenceId returned by cardinal commerce script after initialization from httpParameterMap is set to session.privacy.DFReferenceId and if conditions for handling authorized status for payer authentication flow. 3. InitPayerAuth method is added which initializes the data like order object , JWT token for cardinal commerce script initialization. 4.PayerAuthentication controller method updated for sending order object , JWT token, authenticationTransactionId which are responsible for populating the new 3DS 2.0 popup. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/controllers/COPlaceOrder.js | Adding processorTransactionId returned by cardinal commerce script to session.privacy.processorTransactionId object |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/AccountObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/Billing\_Shipping\_AddressObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/CardinalUtils.ds | contains functions which are used to create order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/CartItemObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/ConsumerObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/JWTBuilder.ds | contains functions which create JWT Tokens required for cardinal script initialization |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/OrderDetailsObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/OrderObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cardinal/TokenObject.ds | prototype object which is useful for creating order Object which is passed to cardinal script |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/checkout/checkoutHelpers.js | functional methods added to handle new 3ds updates for Secure Acceptance Silent Post Authorization |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/common/FindDeviceAgent.js | script file added to return device type |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/cybersource/libCybersource.js | 1. getPartnerSolutionID changed to return new one 2. methods added to get custompreference values required for creating JWT Token 3. addPayerAuthEnrollInfo method modified to add extra payerAuthEnrollService input parameters referenceID,mobilePhone,transactionMode. 4. addPayerAuthValidateInfo method modified to add extra payerAuthValidateService input parameter authenticationTransactionID. 5. addPayerAuthReplyInfo method modified to add paSpecificationVersion , directoryServerTransactionID input parameters to ccAuthService request. 6. getTransactionMode method added to return transactionmode value based on device type. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/façade/CardFacade.ds | 1. CCAuthRequest method modified to pass missing parameters required for ccAuthService to addPayerAuthReplyInfo method. 2. PayerAuthEnrollCheck modified to pass phone number required for payerauthenrollservice to addPayerAuthEnrollInfo method and new output parameters from payerAuthEnrollReply (authenticationTransactionID,specificationVersion,directoryServerTransactionID,CAVV,UCAFAuthenticationData) response are set to responseObject. 3. In PayerAuthValidation method, null check is added for PaRes value and new output parameters from payerAuthValidateReply response (specificationVersion,directoryServerTransactionID) are set to responseObject. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/helper/CardHelper.js | addOrUpdateToken method added to call addorupdatetoken service which is inluded in CardResponse method replacing existing code which calls addorupdatetoken service |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/helper/CommonHelper.js | methods added to get transaction mode and payment class added to submit-order button in review page |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/hooks/payment/processor/cybersource\_credit.js | SilentPostAuthorize method added to cybersource\_credit payment processor for Authorization of the cards. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/secureacceptance/adapter/SecureAcceptanceAdapter.js | In SilentPostResponse method 3DS updates are added which includes setting orderNo to session.privacy.orderId and redirection to CheckoutServices-InitPayerAuth service. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/secureacceptance/helper/SecureAcceptnaceHelper.js | 1. In CreateRequestData method payment\_token is added to signed\_field\_names. 2. In AuthorizeCreditCard method, authenticationTransactionID from payer enroll service session.privacy.process3DRequestParent set to true are forwarded for 3DS 2.0 Redirection . |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/visacheckout/façade/VisaCheckoutFacade.js | 1. In PayerAuthEnrollCCAuthRequest method authenticationTransactionID from payerAuthEnrollReply response is set to responseObject required for cardinal script continue function and transaction mode, phone number are passed to addPayerAuthEnrollInfo method. 2. Null check added for PaRes value in PayerAuthValidationCCAuthRequest method. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/visacheckout/helper/VisaCheckoutHelper.js | authenticationTransactionID from payerAuthEnrollservice is set to session.privacy.authenticationTransactionID which is sent to cardinal commerce script for initialization. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/scripts/Cybersource.js | empty check added for PAXID |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/static/default/custom/js/cybersource-custom.js | added onclick event listeners for all the payments configured to place an order. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/static/default/js/checkout.js | changes done in client/default/js/checkout.js are reflected in this file after npm build |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/templates/default/cart/cardinalpayerauthentication.isml | This isml contains script and required html dom elements and cardinal events configured for initialising the cardinal script and cardinal continue function to start a transaction. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/templates/default/checkout/billing/paymentOptions/creditCardTab.isml | empty line deleted |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/templates/default/checkout/checkout.isml | adding class to submit-order button based on the payment choosen and removed existing class place-order |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/templates/default/payerauthentication/songbird.isml | This isml contains script and required html dom elements and cardinal events configured for initialising the cardinal script. |
| M | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/webreferences/CyberSourceTransaction.wsdl | wsdl properties modified for updating the cybersource endpoint. |
| A | int\_cybersource\_sfra/cartridges/LINK\_cybersource/cartridge/webreferences/CyberSourceTransaction\_1.155.xsd | new XSD file for updated cybersource endpoint |
| A | configuration/PayerAuth-Meta.xml |  |

# Support French Processor

To support French Processor, follow one of the below steps:

* + - 1. Install the latest Cybersource cartridge from Salesforce Marketplace – This is recommended approach **(OR)**
      2. Manually add below changes (SFCC’s GitHub commit) into your workspace code. It is always recommended to test (both 3ds2 and 3ds1 test cards) the changes in your lower box before promoting to Production org.

<https://github.com/SalesforceCommerceCloud/link_cybersource/commit/6f0b66980ce7e60ffb135b65b94d173fe6027c64>

<https://github.com/SalesforceCommerceCloud/link_cybersource/commit/97d2fc51084bb9a88b66101e75b5bbc91329ba14>

<https://github.com/SalesforceCommerceCloud/link_cybersource/commit/dc7dc3ef176673b1247b49d2f0e54fbe90d2be8b>