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# **CyberSource LINK Cartridge**

Version 20.1.0



**Feb 2020**

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# Summary

This document provides technical overview and implementation details for each CyberSource service integrated within Demandware platform. The CyberSource cartridge extends the functionality of Demandware Storefront, enabling real time access to CyberSource eCommerce transaction services listed below.

- Credit Card Authorization
- CyberSource Address Verification
- Delivery Address Verification
- Payment Tokenization
- Payer Authentication
- Tax Service
- Credit Card Secure Acceptance Web /Mobile
  - Redirect method
  - Iframe method
- Credit Card Secure Acceptance Silent Order Post
- Visa Checkout
- AliPay
  - Domestic
  - International
- Retail POS
- Klarna
- Bank Transfer APM's
  - SOFORT
  - BANCONTACT
  - GIROPAY
  - EPS
  - IDEAL
- Apple Pay REST Based Interface
  - To Process Authorization for Encrypted Payload
  - To Process Authorization for Cryptogram
- Android Pay REST Based Interface
  - To Process Authorization for Encrypted Payload
  - To Process Authorization for Cryptogram
- PayPal Express Checkout
  - PayPal Standard/Custom Order
  - PayPal Billing Agreements
  - PayPal Credit Order
- Batch Jobs

- Alternate Payment Check Status Batch Job
- Secure Acceptance Merchant Post Notification Processing Batch Job
- Conversion Details Report Batch Job
- IDEAL Bank Option Batch Job

# Component Overview

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## Functional Overview

### Credit Card Authorization Service

The credit card authorization service pipeline allows storefront application to request for credit authorization for the total order amount. The pipeline makes the credit card authorization web service call to CyberSource authorization service and receive confirmation about the availability of the funds.

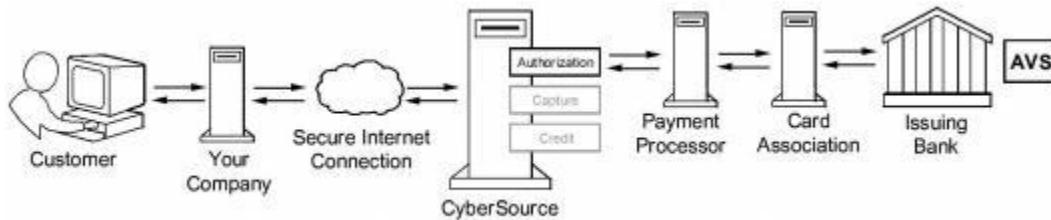
The Demandware CyberSource–AuthorizeCreditCard populates the authorization request with ship-to, bill-to, credit card data, and purchase total data from the basket and invokes the authorization web service call using CyberSource web service API.

Credit Card Authorization sequence flow:

1. Creates CyberSource authorization request using ship-to, bill-to, credit card data, and purchase total data from the current basket.
2. If authorize Payer is configured, then make the authorize payer request, if not ignore and continue with the authorization request.
3. Create credit card authorization request.
4. If DAV is enabled, then set up DAV business rules, as needed.
5. Set up AVS Ignore Result business rule for request with AVS Ignore Flags specification, as needed.
6. Make actual service call to CyberSource Simple Order API.
7. If Delivery Address Verification is enabled, then:
  - a. Capture pertinent DAV result information & DAV Reason Code
  - b. If DAV fails and DAV On Failure is set to 'REJECT', then exit immediately with rejection response
8. If DAV On Failure is set to 'APPROVE' and the DAV Reason Code is a fail code (not 100), then:
  - a. Exit immediately with declined or review response, as merchant defines
9. Capture pertinent AVS information
10. Validate authorization reason code and set corresponding values, based on Auth response code.

The list of activities depicted in the following diagram takes place when API request is made for an online credit card authorization: [Source, CyberSource Credit Card Service, and October 2009]

**Figure 1 Processing an Online Authorization [Source, CyberSource Credit Card Service, October 2009]**



- 1 The customer places an order and provides the credit card number, the card expiration date, and other information about the card.
- 2 You send a request for authorization over a secure Internet connection. If the customer buys a digitally delivered product or service, you can request both the authorization and the capture at the same time. If the customer buys a physically fulfilled product, do not request the capture until you ship the product.
- 3 CyberSource validates the order information, and then contacts your payment processor and requests authorization.
- 4 The processor sends the transaction to the card association, which routes it to the issuing bank for the customer's credit card. Some card companies, including Discover and American Express, act as their own issuing banks.
- 5 The issuing bank approves or declines the request. Depending on the card type, the bank could also use the Address Verification Service (AVS) to determine whether the customer provided the correct billing address. For more information about AVS, refer to AVS service documents via the CyberSource Services Documentation at [http://www.cybersource.com/support\\_center/support\\_documentation/services\\_documentation/payment.php](http://www.cybersource.com/support_center/support_documentation/services_documentation/payment.php) or as described in this integration guide.
- 6 CyberSource runs its own tests, and then tells you if the authorization succeeded.
- 7 Response is sent back to the client.

## CyberSource Address Verification Service (AVS)

AVS does not exist as a stand-alone callable service. Please refer to the Credit Card Authorization Service walkthrough for high level walkthrough.

## Merchant Defined Data (MDD) changes

CyberSource cartridge enables merchant to send additional information in authorization service using MDD fields. This information can be used in OMS. Cartridge does not support to send MDD fields into request, however merchant can customize the Authorise request to pass these additional fields.

## CyberSource Delivery Address Verification Service (DAV)

DAV service may be run as a stand-alone callable service, as well as be performed as a part of other services. Please refer to Credit Card Authorization Service for more information regarding the DAV service, as an integral part of payment auth.

As a stand-alone service, the process is defined as:

- Customer enters shipping information
- Shipping information passes client-side validation (required elements filled in)
- Shipping information passes basic server-side validation (syntactically correct)
- Request is made to CyberSource DAV Service
- Response returns DAVReasonCode (100=Success)
- Method returns either: authorized, declined or error (authorized==success, declined==failure)
- Captured validation information is extracted from arguments to present user with choices to correct problems, confirm “standardized” formatting or try again
- If service is successful, allow Shipping Address save operation to continue

## Decision Manager

- The CyberSource Decision Manager provides Merchant and ability to set business rules, provide case management, and Reporting.
- The CyberSource Decision Manager Business rule engine allows Merchant to analyze the order data based on predefined or custom rules. The business rules can be set by orders, by category, or by SKU.
- The Demandware CyberSource Cartridge is using an alternate “Conversion Detail Report” Job for transaction status updates

## Payment Tokenization

Tokenization is the replacement of sensitive data with a unique identifier that cannot be mathematically reversed. In your environment, tokens take the place of sensitive credit card data. Typically, the token will retain the last four digits of the card as a means of accurately matching the token to the payment card owner. The remaining numbers are generated using proprietary tokenization algorithms.

### How It Works

- To make a purchase on your website, the customer will enter their payment card information into the designated payment fields on the order page. These payment fields will be hosted by CyberSource using Hosted Payment Acceptance. When the customer hits the ‘submit’ button, the data is immediately encrypted and transmitted directly to CyberSource for storing, processing, and token generation. The payment data never enters your environment.

- The encrypted primary account number (PAN) is decrypted when it enters Cyber Source's Level 1, PCI-compliant data vault, where it is securely stored. The payment data is then passed on to the processing channel (bank) and returned to CyberSource with an accepted or denied result. CyberSource returns the result to you but substitutes the PAN data with a uniquely generated token. You store the token in your database of record system (such as ERP system) for future transactions or chargeback resolution on that account. Customer service representatives can easily verify customers as the custom token will retain the last four digits of the original PAN.

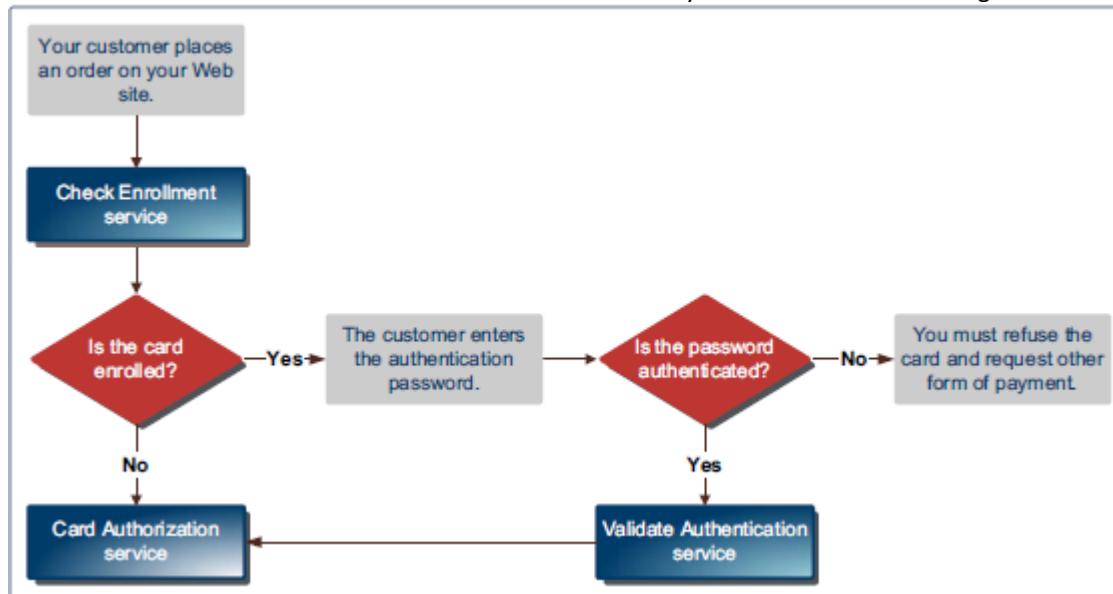
## Payer Authentication

CyberSource Payer Authentication services enable you to add support to your web store for card authentication services, including Visa Verified by VisaSM, MasterCard® and Maestro® SecureCode™ (UK Domestic and international), American Express SafeKeySM, and JCB J/Secure™. These card authentication services deter unauthorized card use and protect you from fraudulent chargeback activity referred to as *liability shift*.

### How It Works

Payer Authentication provides the following services:

- Check Enrollment:** Determines whether the customer is enrolled in one of the card authentication programs.
- Validate Authentication:** Ensures that the authentication that you receive from the issuing bank is valid.



The Check Enrollment service determines whether the customer is enrolled in one of the Card authentication services:

- No:** If the card is not enrolled, you can process the authorization immediately.
- Yes:** If the card is enrolled, the customer's browser displays a window where the customer can enter the password associated with the card. This is how the customer authenticates their card with the issuing bank.
- If the password matches the password stored by the bank, you need to verify that the information is valid with the Validate Authentication service. If the identity of the sender is verified, you can process the payment with the Card Authorization service.

- If the password does not match the password stored by the bank, the customer may be fraudulent. You must refuse the card and can request another form of payment.

## Tax Service

Online Customer adds Product(s) to Cart and proceeds to Checkout. As soon as shipping information is entered and validated, taxes are updated to reflect current tax rates based on six basic criteria:

- 1) Customer ship to address
- 2) Merchant ship from address
- 3) Merchant point of order origin (POO)
- 4) Merchant point of order acceptance (POA)
- 5) Product code
- 6) Merchant nexus

Product information is provided on an individual line item basis and all merchant/request IDs are captured for future reference. When the customer enters in shipping information, the Tax Service is called to calculate taxes.

## Secure Acceptance Authorization

Secure Acceptance payment gateway is used to process transaction requests directly from the customer browser so that sensitive payment data does not pass through Demandware servers. Secure Acceptance feature is implemented using these secure acceptance payment methods:

1. Secure Acceptance – Redirect
2. Secure Acceptance – Iframe
3. Secure Acceptance – Silent Post

All the above secure Acceptance methods provide a common feature of handling the secure information on secure pages only.

**Secure Acceptance Redirect:** Customer will get redirect to secure Acceptance payment gateway when clicking on Place Order from Review Page

**Secure Acceptance Iframe:** Customer will get redirect to secure Acceptance payment gateway within an Iframe embedded in a new summary page added into checkout flow

**Secure Acceptance Silent Order Post:** Credit Card form data is posted to secure acceptance silent post URL and token is generated and user is redirected on review page and normal card authorization flow is being used to further process the transaction.

Secure Acceptance Web/Mobile Authorization Sequence flow:

1. Secure Acceptance Authorize create Request signature using signed and unsigned field

- names to validate the request on secure pages
2. Post the request data[i.e.: billing/shipping/card details, signature in signed and unsigned fields] in to selected APM form Action
  3. Secure Acceptance validate the request using signature and open the secure payment pages to complete the checkout flow
  4. After successful checkout completion ,Customer is return back to Demandware custom pipeline method[configured in CyberSource profile]
  5. Secure Acceptance response method get the response in CurrentHttpParameterMap,again signature is created using the response data and matched with the response signature, once validated response is parsed
  6. Based on Decision and reason code Order will get placed or failed in Demandware.

Secure Acceptance Silent Order Post Authorization Sequence flow:

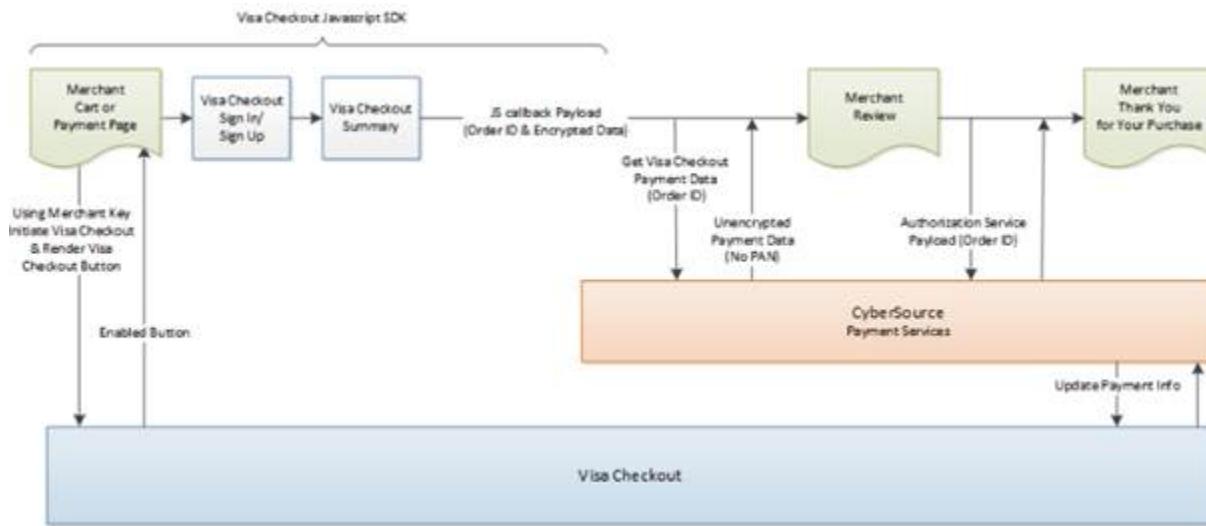
1. An Ajax function is created to call Secure Acceptance silent post pipeline to prepare request data except card details
2. Card details are populated within Ajax to prevent security breach , further the details are posted to selected APM form action URL
3. Silent post will create or update token based on request details and return the response on Demandware custom pipeline method which parse the response of CurrentHttpParameterMap and return back to corresponding pages[summary/billing/cart]

On Place Order ,Secure Acceptance authorization is called which internally completed the flow using CyberSource Authorization[refer Credit Card Authorization service]

## Visa Checkout

Visa Checkout and the CyberSource credit card services work together as an integrated offering. CyberSource provides the following services to assist with your Visa Checkout integration

- Get Visa Checkout data: this service retrieves Visa Checkout data, which enables you to display payment and shipping details to the customer during checkout.
- Authorization: this service enables you to send an authorization request to your processor using the Visa Checkout payment data



1. Your web site integrates directly to Visa Checkout to display the Visa Checkout button on your checkout page.
2. CyberSource provides the get Visa Checkout data service, which retrieves the Visa Checkout payment data, except the PAN. You can use the retrieved data to help the customer confirm the purchase.
3. You submit an authorization request to CyberSource for credit card processing. Instead of including payment information in the authorization request, you include the Visa Checkout order ID.
4. At various points in the transaction cycle, you notify the customer of the transaction status.

## AliPay Authorization

The Alipay authorization service allows storefront application to request for authorization for total ordered amount along with the currency. This make the web service call to CyberSource Alipay initiate service to initiate payment request and authorize the amount and after successful initiation pipeline make the web service call to check the payment status of initiated request.

The Demandware CyberSource- AuthorizeAlipay populates the payment initiate request with purchase total data, product name, product description and Alipay Payment type such as APD (Domestic payment for China based merchant to trade in China) and APY (International payment for International merchant to trade from outside China) and invoke the initiate web service call using CyberSource web service API.

### Alipay Authorization Sequence Flow:

1. Create CyberSource Alipay Initiate request using purchase total data, product name, and product description (optional) from the current order object
2. Set Alipay payment type to domestic or international in site preference

3. After configuration make actual service call to Alipay Initiate request
4. Validate Reason code and Decision of Initiate request and accordingly set the corresponding variables.
5. If initiation is successful, then assign the required values in Demandware Payment Transaction object and create CyberSource Alipay Check Status Request using Request ID of Initiate service response
6. Make service call to Alipay Check Status request to return the payment status of initiated request
7. Validate Reason Code and Payment status of check status service response and set the corresponding variables
8. If ReasonCode = 100 then check the payment status. If payment status is COMPLETED for service call then complete the checkout flow and place the order with "New" as order status and "Paid" as order payment status.
9. If ReasonCode = 100 and PaymentStatus = PENDING, complete the checkout flow with order status as "Created" and order payment status as "Not Paid".
10. If ReasonCode = 100 and PaymentStatus = ABANDONED or PaymentStatus = TRADE\_NOT\_EXIST, fail the order and show message on the screen.
11. If Decision = REJECT and ReasonCode = 102 or ReasonCode = 233, fail the order and show message on the screen.
12. If Decision = ERROR and ReasonCode = 150, fail the order and show message on the screen.

**Note:** As Alipay live environment is not available, so for Alipay Domestic and International scenarios, Site Preference configuration for Reconciliation ID needs to configure to test various scenarios of Alipay Initiate and Check Status service. Also, If shopper does not return from the AliPay then Demandware order status shall remain the same as "Created" and shall be updated once Batch Job for Check Payment Status service runs from scheduler

## Retail Point-of-Sale (POS)

This service of CyberSource enables a merchant to process a credit card for retail point-of-sale transaction at their stores. The integration takes inputs for the API service and provides CyberSource API response for later use. This integration takes care for terminal which has manual entry for credit card details and terminal with a magnetic stripe where a credit card can be swiped and enter amount for the transaction.

## Klarna

The Klarna authorization service pipeline allows storefront application to request for credit authorization for the total order amount. The pipeline initially makes the call to CyberSource Init Session service to initialize the Klarna widget and Klarna JS API authorization call along with authorization web service call to CyberSource authorization service and receive confirmation about the availability of the funds.

The Demandware KLARNA\_CREDIT-Authorize populates the authorization request with ship-to, bill-to, Klarna Item data, and purchase total data from the basket and invokes the authorization web service call using CyberSource web service API.

Klarna sequence flow:

1. Creates CyberSource Init session request using ship-to, bill-to, item data, and purchase total data from the current basket
2. Make actual service call to CyberSource Init session service
3. If service returns ACCEPT as decision and 100 as reason code, get the processor token from session service response and set its value into a session variable
4. If service returns any other decision apart from ACCEPT and 100 as reason code, display an error message on billing page
5. Pass the value of processor token Klarna JS API to load the Klarna widget on summary page
6. Create CyberSource authorization request using ship-to, bill-to, item data, and purchase total data from the current basket
7. If Decision Manager is configured in site preference, pass its value to true else false in CyberSource authorization call
8. Click Pay button to first authorize the request through Klarna JS API and then pass the pre-approved token returned by JS API authorization request in CyberSource authorization request
9. If authorization service returns 'ACCEPT' as decision, 100 as reason code and 'authorized' or 'pending' as payment status and If merchant URL redirection is configured in site preference, redirect the user to merchant URL and return back to merchant site to complete the order
10. If authorization service returns 'ACCEPT' as decision and 100 as reason code, 'authorized' as payment status and merchant URL redirection is false, complete the order and modify order and export status
11. If authorization service returns 'ACCEPT' as decision and 100 as reason code, 'pending' as payment status and merchant URL redirection is false, CyberSource check status service would be called to complete the transaction
12. If authorization service returns 'ACCEPT' as decision, 100 as reason code and 'failed' as payment status, exit immediately and change the status of order to failed
13. If authorization service returns 'REJECT' or 'ERROR' as decision, exit immediately and change the status of order to failed
14. If authorization service returns 'REVIEW' as decision, complete the order transaction but order status would be created itself
15. If payment status is 'pending', CyberSource check status service call would be made for both merchant URL redirected orders and non-redirected orders
16. If check status service returns 'ACCEPT' as decision, 100 as reason code and 'authorized' or 'settled' as payment status, complete the order and modify order and export status
17. If check status service returns 'ACCEPT' as decision, 100 as reason code and 'pending' as payment status, complete the order without modifying order and export status
18. If check status service returns 'ACCEPT' as decision, 100 as reason code and 'abandoned' or 'failed' as payment status, exit immediately and change the status of order to failed

19. If check status service returns 'REJECT' or 'ERROR' as decision, exit immediately and change the status of order to failed
20. If check status service returns 'REVIEW' as decision, complete the order transaction but order status would be created itself  
Validate authorization reason code and set corresponding values, based on Auth response code.

### Merchant Id/Key Specific Changes for Klarna

Different countries and specific currencies could be configured to run Klarna with different Merchant Id/Key specific to different sites. Functional flows would be similar on different sites. Merchant Id/Key could be configured at Merchant Tools -> Ordering -> Payment Methods -> Klarna. In this release, Klarna has been supported for US, UK and Germany with different sites and corresponding Merchant Ids/Key.

To update the value of merchant Id/Key specific to the sites, follow below mentioned steps.

- Change the language to either English(United States), English(United Kingdom) or German(Germany)
- Select Klarna as payment method and enter merchantID and merchantKey field in CyberSource Credentials section of payment method

The screenshot shows the 'Payment Methods' section of the Salesforce Commerce Cloud interface. The top navigation bar includes links for 'Sandbox - cybersource03 SiteGenesis', 'Merchant Tools', 'Administration', 'Storefront', and user information. The 'Payment Methods' page displays a list of payment methods: DW\_ANDROID\_PAY, DW\_APPLE\_PAY, GIFT\_CERTIFICATE, KLARNA, PAYPAL, SA\_IFRAME, SA\_REDIRECT, SA\_SILENTPOST, SOFORT, TEST, and VISA\_CHECKOUT. A dropdown menu for 'Language' is open, listing various languages with their respective codes. The 'English (United States)' and 'German (Germany)' options are specifically highlighted with red boxes.

The screenshot shows the 'KLARNA Details' configuration screen. It includes sections for 'Customer Groups', 'Min/Max Payment Ranges', 'Bank Transfer Options' (with fields for 'Is Supported Bank List Required' and 'Is Bic Enabled'), and 'Cybersource Credentials' (with fields for 'merchantID' and 'merchantKey'). The 'Cybersource Credentials' section is highlighted with a red border.

## Bank Transfer

The Bank Transfer service pipeline allows storefront application to request to sale total order amount. The pipeline makes the call to CyberSource sale service to authorize the purchase amount and in return a call has been made to check status service to complete the functional flow.

The Demandware BANK\_TRANSFER—Authorize populates the sale request with bill-to, Item data, purchase total data and merchant descriptor data from order and invokes the sale web service call using CyberSource web service API.

**Note:** For Bank Transfer, same processor BANK\_TRANSFER has been used for different APMs under Bank Transfer type. If merchant want to add a new APM which consist of CyberSource sale and check status service, new APM could be added choosing BANK\_TRANSFER as processor while creating new payment method in payment setting. Following APMs have been addressed as a part of this release.

- SOFORT
- BANCONTACT
- IDEAL
- EPS
- GIROPAY

### Configure new Bank Transfer Type APM using business Manager Console

New Bank Transfer Type APM which consist of CyberSource sale and check status service could be configured at Merchant Tools -> Ordering -> Payment Methods. Follow below mentioned steps to add a new APM.

- Go to Administration -> System Objects -> PaymentMethods -> Attribute Definitions -> select paymentType custom attribute

General **Attribute Definitions** Attribute Grouping

### Object Type 'PaymentMethod'

This page lists the attribute definitions of your object type. Use the search to find attribute definitions by ID and name. Click New to create new attribute definitions. Click Delete to delete existing attribute definitions.

Search Attribute Definitions						
ID or Name:	<input type="text"/>	Find				
Select All	ID	Name	Type	Attribute Settings	Values	
<input type="checkbox"/>	<b>ID</b>	ID	String	*	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>UUID</b>	UUID	String	*	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>creationDate</b>	Creation Date	Date+Time	*	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>description</b>	Description	HTML	①	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>image</b>	Image	Image		0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>isBicEnabled</b>	Is Bic Enabled	Boolean		0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>isSupportedBankListRequired</b>	Is Supported Bank List Required	Boolean		0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>lastModified</b>	Last Modified	Date+Time	*	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>merchantID</b>	merchantID	String	①	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>merchantKey</b>	merchantKey	String	①	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>name</b>	Name	String	①	0	<a href="#">Edit</a>
<input type="checkbox"/>	<b>paymentType</b>	Payment Type	Enum of Strings		6	<a href="#">Edit</a>

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- Add new value of payment type for newly added APM. Value refers the apPaymentType value in sale request for the newly added APM.

Display Name: Payment Type  
 Help Text: Payment Type

Value Type: **Enum of Strings** Note: Searchable via query framework.  
 Localizable:  ⓘ  
 Mandatory:  \*

Externally Managed:  ⓘ  
 Select Multiple:

[Apply](#) [Reset](#)

### Object Type 'PaymentMethod' - Attribute Value Range Definition

This section lists the attribute value definitions of the attribute. Create a new attribute value definition by providing the "Value" and "Display Value" in the "New Value" section below. Click Apply to update the attribute value definitions. Click Reset to revert your changes. Click Delete to delete selected attribute value definitions.

Search Attribute Value Definitions

Select All	Value	Display Value	Default	Sorting
<input type="checkbox"/>	SOF	SOFORT	<input type="radio"/>	<input type="checkbox"/>
<input type="checkbox"/>	MCH	BANCONTACT	<input type="radio"/>	<input type="checkbox"/>
<input type="checkbox"/>	IDL	IDEAL	<input type="radio"/>	<input type="checkbox"/>
<input type="checkbox"/>	GPY	GIROPAY	<input type="radio"/>	<input type="checkbox"/>
<input type="checkbox"/>	EPS	EPS	<input type="radio"/>	<input type="checkbox"/>
<input type="checkbox"/>	TEST	TEST	<input type="radio"/>	<input type="checkbox"/>

- Go to Merchant Tools -> Ordering -> Payment Methods and click New button
- Provide ID and Name of new APM and select Yes from enabled drop down to enable that APM

## Payment Methods

Payment Methods		
ID	Name	Language: Default
DW_APPLE_PAY	Apple Pay	Yes /
GIFT_CERTIFICATE	Gift Certificate	Yes 1
KLARNA	Klarna Credit	Yes 13
New Payment Method - 8/28/17 9:37:51 am		No 16
PAYPAL	Pay Pal	Yes 6
SA_IFRAME	Iframe	Yes 11
SA_REDIRECT	Secure Acceptance Redirect	Yes 9
SA_SILENTPOST	Secure Acceptance Silent post	Yes 10
SOFORT	SOFORT Bank Transfer	Yes 14
TEST	TEST	Yes 15
VISA_CHECKOUT	Visa Checkout	Yes 8

- Select payment processor to BANK\_TRANSFER for newly added APM and select payment type to newly added payment type for new APM
- If BIC field is required to display on billing screen, select **Is Bic Enabled** checkbox to true

The screenshot shows the 'Payment Methods' configuration screen. A new payment method 'TEST' has been added at the bottom of the list. The 'TEST' row is highlighted with a red box. In the 'TEST' row, the 'Payment Processor' dropdown is set to 'BANK\_TRANSFER <BANK\_TRANSFER>' (highlighted with a red box). Under 'Bank Transfer Options', the 'Is Bic Enabled' checkbox is checked (highlighted with a red box). A dropdown menu for 'Payment Type' is open, showing options like '- NONE -', 'SOF (SOFORT)', 'MCH (BANCONTACT)', 'IDL (IDEAL)', 'GPP (GIROPAY)', and 'EPS (EPS)'. The 'EPS (EPS)' option is highlighted with a red box.

- With all these changes, new APM would be displayed on billing page to process with Bank Transfer payment

### Bank Transfer sequence flow:

- Select SOFORT or BANCONTACT payment methods from billing page and proceed with the payment
- For IDEAL, select bank from bank list, for EPS and GIROPAY, enter BIC number and proceed with the payment
- Creates CyberSource sale service request using bill-to, item data, purchase total data and merchant descriptor data from the current basket
- Make actual service call to CyberSource sale service
- If service returns 'ACCEPT' as decision, 100 as reason code and 'pending' as payment status, redirect the user to bank site

6. If service returns 'ACCEPT' as decision, 100 as reason code and 'failed' as payment status, exit immediately, redirect back the user to merchant site along with error message and change the status of order to failed
7. If service returns 'REJECT' as decision, exit immediately, redirect back the user to merchant site along with error message and change the status of order to failed
8. If service returns 'REVIEW' as decision, complete the order transaction but order status would be created itself
9. After successful authorization of amount on bank site, user would be redirected back to merchant site. After redirection, call to CyberSource check status service would be made to complete the transaction
10. If check status service returns 'ACCEPT' as decision, 100 as reason code and 'authorized' or 'settled' as payment status, complete the order and modify order and export status
11. If check status service returns 'ACCEPT' as decision, 100 as reason code and 'pending' as payment status, complete the order without modifying order and export status
12. If check status service returns 'ACCEPT' as decision, 100 as reason code and 'abandoned' or 'failed' as payment status, exit immediately and change the status of order to failed
13. If check status service returns 'REJECT' or 'ERROR' as decision, exit immediately and change the status of order to failed
14. If check status service returns 'REVIEW' as decision, complete the order transaction but order status would be created itself

## Apple Pay

Developed REST Interface as a standalone services and cartridge does not have end-to-end direct integration with DW native Apple Pay Web/APP functionality. However interface has mechanisms to integrate individual methods with DW Native Apple Pay web/APP.

REST interface support can accept two type of parameter in JSON format.

1. Payload and order Number data
2. Network Token, Order Number, Card type, Token Expiration Date, and cryptogram data

## Android Pay

Developed REST Interface as a standalone services and cartridge does not have end-to-end direct integration with DW native Android Pay Web/APP functionality.

REST interface support can accept two type of parameter in JSON format.

1. Payload and order Number data
2. Network Token, Order Number, Card type, Token Expiration Date, and cryptogram data

## PayPal Express

PayPal Express provides set of services which enables you to do the checkout in faster and safer way. PayPal integration with CyberSource provides 3 ways to complete the checkout.

- 1) Minicart
- 2) Cart Page
- 3) Billing Page

CyberSource cartridge provides in-context checkout option i.e. when customer clicks on Checkout with PayPal on checkout page or mini cart, the website remains in the view while PayPal Window appears. The Customer logs in and selects a payment method and shipping address and confirms the payment and PayPal redirects the customer on order review page. CyberSource cartridge enables merchant to select the order type from BM i.e. Custom or Standard.

## Custom Order

PayPal Custom Order enables you to perform multiple authorizations and multiple captures for each authorization. Below are the service requests for custom order

- **Sessions Service**- Creates a payment with PayPal to set up an order
- **Check Status Service**- Requires the request ID value that was returned in Sessions Service and returns customer information
- **Order Service**- Requires the request ID value that was returned in Sessions Service and Payer ID, creates the order in anticipation of one or more authorization
- **Authorization Service**- Requires request ID value that was returned in the order response, obtains the authorization
- **Capture Service**-Requires the request ID value that was returned in the authorization response and enables you to capture the entire authorized amount

## Standard Order

PayPal Standard Order enables merchants to accomplish authorize and capture at the same time. Below are the service requests for Standard order

- **Sessions Service**- Creates a payment or Billing agreement with PayPal to set up an order
- **Check Status Service**- Requires the request ID value that was returned in Sessions Service and returns customer information
- **Order Service**- Requires the request ID value that was returned in Sessions Service and Payer ID, creates the order in anticipation of one or more authorization
- **Sale Service**- Requires the request ID value that was returned in order response, this service obtains authorization, and captures the authorized amount

## PayPal Credit

The PayPal credit button on your checkout page enables you to offer customer's PayPal Credit as a standalone payment method. PayPal Credit leverages the PayPal Express implementation. For PayPal credit only an additional flag paymentOptionID as true need to include in Sessions service request. Below are the service requests for PayPal Credit.

- **Sessions Service** with additional flag paymentOptionID
- After getting the payment Transaction ID and request ID from sessions response , same service

flow will be used as mentioned in PayPal express

## PayPal Billing Agreement

A PayPal Express Checkout billing agreement enables you to use Billing agreement ID for billing without requiring customer to specifically authorize each payment. Once the agreement created for customer, customer's billing agreement ID would be used to Authorize the order. PayPal Billing agreement is applicable only for logged user, when customer checks Billing agreement checkbox from Billing page additional flag `billingAgreementIndicator` need to include in Session service request. Request ID returned in session service will be used in PayPal Billing agreement service, Billing Agreement ID would be saved in customer profile, this billing agreement ID would be used in further transaction. CyberSource Cartridge allows merchants to enable/disable billing agreement from BM site preferences. Below are the service requests for Billing Agreement

- **Sessions Service** – Creates Billing agreement with PayPal to setup an order
- **Billing Agreement Service**- if customer profile does not contain Billing Agreement ID, this service would create the Billing agreement and saves the Billing agreement ID in customer profile. It requires the request ID value returned in sessions response
- **Check Status Service**- If customer profile contains billing agreement ID , sessions service would be skipped , billing agreement ID would be used in Check Status service
- **Sale Service** – Requires billing agreement ID returned in billing agreement service response. This service obtains authorization, and captures the authorized amount

## Conversion Detail Report

### Integration Overview

This job uses a simple API to retrieve order decisions from CyberSource and update the order confirmation status in SFCC.

As described in the previous section, when Decision Manager is enabled, a certain number of orders will be flagged for review, and not fully confirmed in your SFCC storefront. When integrating with your OMS, you must decide if you want to export orders that are set to 'Not Confirmed'. If you only send Confirmed orders to your OMS, you will need this job to update the confirmation status of the orders that have been reviewed and accepted.

### Implementation

If you are not using Decision Manager, you do not need this job. If your OMS asks you to send them 'Not Confirmed' Orders, you may or may not want this job. You will need to determine if the Order confirmation status is required, or desired in SFCC for your business needs.

To Integrate this job into your site, follow the below steps:

1. Navigate to 'Administration > Operations > Job Schedules'
2. Create the Job '**CyberSource: Decision Manager Order Update (Controllers & Pipelines)**'
3. Select the 'Step Configurator tab.'
4. Select the Sites you want the Job to run on, from the 'Scope' button.
5. Navigate to the 'Schedule and History' tab and configure the frequency you would like the job to run.
6. Create a step that executes the script:  
int \_cybersource/cartridge/scripts/jobs/DMOrderStatusUpdate.js function : orderStatusUpdate and ensure it is set to transactional.
7. Ensure the 'Enabled' check box is selected.
8. Update Custom Parameters MerchantId, SAFlexKeyID and SAFlexSharedSecret.

When moving to a production environment, the URL for the API call needs to be updated in the service credentials in Business Manager.

This job is configured based on various site preferences described below:

## *Configuration*

Configure values for below **job parameters** in step **UpdateOrderStatus**

Parameter Name	Usage
MerchantId	CS Merchant ID for the account to get Decisions from.
SAFlexKeyID	Key ID. Work with CS to generate this value.
SAFlexSharedSecret	Shared secret. Work with CS to generate this value.

### Job Parameters: UpdateOrderStatus

Preference Name	Site Pref Group	Usage
CS Decision Manager OrderUpdate Lookback time	Core	Number of hours the job will look back for new decisions. CS does not support lookbacks over 24 hours. Do not set above 24.
Secure Acceptance Flex Host Name	Secure Acceptance	Host Name. CS can provide this value.

## **Secure Acceptance Merchant Notification Post Batch Job**

The batch job process merchant post notifications arrived from cybersource secure acceptance web/mobile. These notification response data get stored in demandware custom object "SA\_MerchantPost".

Further when batch job runs it update those orders which did not got updated in regular customer

checkout journey due to network issues. The job process below scenarios

1. Order already updated in the checkout journey itself then custom object entry removed for order
2. Order not updated in checkout journey then merchant post response read from custom object in JSON form and information updated in the order
  - a. Billing/shipping address
  - b. Order status as New/Failed
  - c. Payment authorization response
  - d. Card get saved for logged in user if customer opted in checkout journey

Note: It is recommended to have the batch job frequency every 15 min to update order status and release inventory

## **IDEAL Options Service Batch Job**

Cartridge will provide a batch Job to fetch the options details for Ideal and store them into salesforce commerce cloud Business Manager Custom objects. Job can be configured to run at any defined interval using SFCC Job framework. Ideally it should not run on frequent basis but it's purely configurable to run at merchant choice and need and SFCC capabilities. Job will populate/update the SFCC custom objects with the response data. If Shopper selects "IDEAL" as payment method on commerce cloud billing page, Bank options list will be displayed as drop down for shopper to select a preferred bank to proceed. The selected bank name will be passed into IDEAL sale service request.

## **Alternate Payment Check Status Batch Job**

AP check status batch job process Demandware orders placed by ALIPAY/Bank Transfer/Klarna as payment method by making web service call to AP Check Status Service.

The Demandware APCheckStatusJob.js script module is called from batch job that populates the check status request with Request ID and PaymentType generated and stored in Demandware Payment Transaction custom attribute for every order placed by Alipay/Bank Transfer/Klarna as payment method and invoke the Check Status web service call using CyberSource web service API. The Job Picks all the orders placed before 30 minutes of the current time (i.e. LagTime) which is configurable through Job as per merchant need.

### **AP Check Status Batch Job Sequence Flow:**

1. Query on all the Demandware orders placed with order status as 'CREATED', export status as 'NOT EXPORTED' and Lag time as set in Jobs parameter.
2. Iterate through all orders whose Payment processor are CYBERSOURCE\_ALIPAY / BANK\_TRANSFER / KLARNA\_CREDIT Credit and get the Request Id stored in Order Payment Transaction custom object attribute.
3. Pass the Request Id and Payment Type to AP Check Status Service and make the actual service call.

4. Validate Decision, Reason Code and Payment status of check status service response and set the corresponding variables
5. If Decision = ACCEPT and ReasonCode = 100 then check the payment status as:
  - For Payment Status as COMPLETED/ AUTHORIZED/ SETTLED - Update the order with Order status to “New”, Confirmation Status to “Confirmed” and export status to “Ready For Export”. Also update Order Payment Transaction custom object attributes as apPaymentStatus, order payment status to “PAID”.
  - For Payment Status as PENDING, no need to update any Demandware status in case of PENDING Payment Status
  - For Payment Status as ABANDONED/ TRADE\_NOT\_EXIST/FAILED, fail the order.
6. With Decision = REJECT/ERROR and any other ReasonCode except 100, fail the order.

## Use Cases Scenarios

### Credit Card / VisaCheckout / Apple Pay Authorization

The following table outlines the possible Demandware actions based on the response of the CyberSource gateway. Each client may choose to handle the response code differently. As of release 2.10, all errors logged as “fatal”, can activate an email alert to recipients identified in business manager.

Response	DW Storefront Action	Cyber- Source Code	CyberSource suggested response
Successful transaction.	Continue Checkout	100	
<b>Validation Errors</b>			
Request is missing one or more fields	Should not occur as validation should catch this Show user “denied” error message Log fatal error (email alert)	101	See the reply fields missingField_0...N for which fields are missing. Resend the request with the complete information.
One or more fields in the request contain invalid data.	Should not occur as validation should catch this Show user “denied” error message Log fatal error (email alert)	102	See the reply fields invalidField_0...N for which fields are invalid. Resend the request with the correct information.

<b>System Errors</b>			
General system failure.	Show user “Unable to process – Call Cust Service” error message Log fatal error (email alert)	150	Wait a few minutes and resend the request.
The request was received but there was a server time-out.	Show user “Unable to process – Call Cust Service” error message Log fatal error (email alert)	151	Wait a few minutes and resend the request.
The request was received but there was a service time-out.	Show user “Unable to process – Call Cust Service” error message Log fatal error (email alert)	152	Wait a few minutes and resend the request.
The request just wait and then timeout, ends up as exception on the Demandware script	This could be one of the unique scenarios where CyberSource waits for the Merchant’s bank to authorize the order and exceeds timeout sets at the Demandware. This ends up into SOAP exception. Client code can handle this scenario differently.	Script sets Reason Code to 999	Handle at client’s end depending on business rules associated with this scenario.
<b>Authorization denied errors</b>			
Declined the request because the card has expired.	Show user “Auth denied” error message	202	Request a different card or another form of payment.
The account number is invalid.	Show user “Auth denied” error message	231	Request a different card or other form of payment.
<b>Gateway Account problem</b>			
There is a problem with your merchant configuration.	Show user “Unable to process – Call Cust Service” error message Log fatal error (email alert)	234	Do not resend the request. Contact Customer Support to correct the configuration problem.
<b>Fraud Management</b>			

The fraud score exceeds your threshold.	Show user “Unable to process – Call Cust Service” error message Log fatal error (email alert)	400	
The order is marked for review by Decision Manager.	Proceed with checkout Leave DW order “unconfirmed”	480	
The order is rejected by Decision Manager.	Show user “Unable to process – Call Cust Service” error message Log fatal error (email alert)	481	

## Address Validation Service (AVS)

Note that AVS does not run as an independent process, but is instead an optional, integrated aspect of payment authorization. List of use cases and appropriate action taken listed below:

Use case scenarios	Result
AVS Ignore Result set to true	AVS Information is captured, but does not affect authorization response.
AVS Ignore Result set to false	AVS information is captured and if result from AVS is error or declined, then propagates that result up to the calling service.
AVS Ignore Result is set to false & AVS Decline Flags is defined	Seed request with additional result codes which should also result in a declined response.

## Delivery Address Verification Service (DAV)

List of use cases and appropriate action taken listed below:

Use case scenarios	Result
DAV Enable is set to false	No DAV information will be requested. No correction/validation information will be collected from the response.
DAV Enable is set to true, DAV On Failure set to REJECT	DAV information will be requested from the calling service. DAV related corrections and validation information is captured, and a DAV-related failure will be propagated to the calling service.
DAV Enable is set to true, DAV On Failure set to APPROVE	DAV information will be requested from the calling service. DAV related corrections and validation information is captured, but the result does not affect Authorization result.

## Payment Tokenization

Payment Tokenization service stores the customer and card related sensitive data for future reuse. Updates order object with the subscription id received from Cybersource. Now tokenization will work along with Payer Authorization as well.

List of use cases and appropriate action taken listed below:

Use case scenarios	Result
Create subscription response is set to "ACCEPT"	Place the order and update the order object with subscription id. The subscription ID to be updated in field creditCardToken, this field not visible in BM order
Create subscription response is set to "REJECT"	Place the order but leave the subscription field empty. Make entry in log files to record the event.

## Payer Authorization

List of use cases and appropriate action taken listed below:

Use case scenarios	Result
Enrolment Check Error	Merchant proceeds to authorization (optional)
Cardholder Not Participating	Merchant proceeds to authorization
Unable To Verify Enrolment	Merchant proceeds to authorization (optional)
Successful Authentication	Merchant proceeds to authorization
Authentication Failure	Merchant asks for another form of payment
Attempted Authentication	Merchant proceeds to authorization
Authentication Unavailable	Merchant proceeds to authorization (optional)
Invalid Authentication Response	Merchant asks for another form of payment
PARes Signature Error	Merchant asks for another form of payment
Whitespace in PARes	Merchant proceeds to authorization

## Tax Service

List of use cases and appropriate action taken listed below:

Use case scenarios	Result
If shipping information is specified, then request is made to the Tax Service	If successful, the contents of the Basket are taxed and price totals are adjusted. If failed, because of service outage or failed address verification then don't update anything. Other services must handle AVS/DAV/Service outages before successful checkout and final sales tax calculation. Failure is logged for email notification.

<p>Since cybersource charges per request to the tax service, the cartridge has been modified to reduce the number of tax requests. Subsequent tax requests in the current session are only made to cybersource if the line item's products id, quantity or price has changed or if the basket merchandise price total (including order level and product level), adjusted shipping price totals or adjusted basket total price has changed.</p>	<p>If the basket state that would affect tax has changed then a tax call will be made to cybersource and the basket will be updated with the new tax prices. If the basket state that would affect tax has not change, the request to cybersource is skipped.</p>
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## Secure Acceptance Authorization

Following are the list of reason codes received for Secure Acceptance payment service response. System shall be handling these codes and change the Demandware status accordingly.

Decision	Description	CYB hosted Decision
Successful transaction.	Successful transaction. Reason codes 100 and 110.	100
Request is missing one or more fields	Authorization was declined; however, the capture may still be possible. Review payment details. See reason codes 200, 201, 230, 480, and 520.	101
One or more fields in the request contain invalid data.	Transaction was declined. See reason codes 102, 202, 203, 204, 205, 207, 208, 210, 211, 221, 222, 231, 232, 233, 234, 236, 240, 475, 476, and 481.	102
General decline by the processor	Access denied, page not found, or internal server error. See reason codes 102, 104, 150, 151 and 152	233
General system failure.	The customer did not accept the service fee conditions. v The customer cancelled the transaction.	150
Create Token Service	Silent Post Service for create token when user enter card details on billing page on merchant site	100
Update Token Service	Silent Post Service for create token when user choose existing saved cards on billing page on merchant site	100

Authorization and Create Token Service	Redirect or Iframe service for Authorization and create token when no saved card is chosen	100 or 480
Authorization and update Token Service	Redirect or Iframe service for Authorization and create token when user choose saved card	100 or 480
Authorization Service	Redirect or Iframe service for Authorization when tokenization is disabled from BM	100 or 480

## VISA Checkout Decrypt

List of use cases and appropriate action taken listed below:

Service	Description	CYB hosted Decision
Decrypt	Accept – review page displayed decrypted details	100
Decrypt	Error - System – user redirect to cart page with standard error message	150
Authorization	Behavior would remain same as card flow, where confirmation page displayed on successful authorization and review page with error message in case of error	Same as Credit Card Reason code

## Alipay Authorization

The following table outlines the possible Demandware actions based on the response of the CyberSource gateway. Each client may choose to handle the response code differently.

Response	DW Storefront Action	CYB Code	CYB Suggested response
Successful transaction.	Continue Checkout	100	
<b>Validation Errors</b>			
Request is missing one or more fields	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	101	See the reply field’s missingField_0...N for which fields are missing. Resend the request with the complete information.
One or more fields in the request contain invalid data.	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	102	See the reply field’s invalidField_0...N for which fields are invalid. Resend the request with the correct information.

General decline by the processor	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	233	Request that the customer select a different form of payment.
<b>System Errors</b>			
General system failure.	Show user “Unable to process – Call Customer Service” error message Log fatal error	150	Wait a few minutes and resend the request.
The request just wait and then timeout, ends up as exception on the Demandware script	This could be one of the unique scenarios where CyberSource waits for the Merchant’s bank to authorize the order and exceeds timeout sets at the Demandware. This ends up into SOAP exception. Client code can handle this scenario differently.	Script sets Reason Code to 999	Handle at client’s end depending on business rules associated with this scenario.

## Retail Point-of-Sale (POS)

The use case for POS can be achieved by two scenarios:

1. **Hardware - swipe credit card** – (A Bluetooth scanning device must be paired to the iPad device.) On Payments page, we listen for credit card swipes only after the user has entered the amount for Credit Card and tapped enter.

**Expected Result:** The swiped credit card is read and payment is made to the order

2. **Hardware - manually enter credit card with keypad**: (A Bluetooth scanning device must be paired to the iPad device.) From Payments page, enter amount to be applied to credit card.

**Expected Result:** Manually enter credit card number on device and payment is accepted

## Klarna & Bank Transfer

Response	DW Storefront Action	CYB Code	CYB Suggested response
Successful transaction.	Continue Checkout	100	
<b>Validation Errors</b>			

One or more fields in the request contain invalid data.	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	102	See the reply field’s invalidField_0...N for which fields are invalid. Resend the request with the correct information.
General decline by the processor	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	233	Request that the customer select a different form of payment.
General decline by the processor	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	203	Processor declined the transaction because of funding source problems, or the transaction was flagged as high risk.
General decline by the processor	Should not occur as validation should catch this Show user “denied” error message Log error message into Demandware logs	204	Payment declined because of insufficient funds in the account.
<b>System Errors</b>			
General system failure.	Show user “Unable to process – Call Customer Service” error message Log fatal error	150	Wait a few minutes and resend the request.

## PayPal Express / PayPal Credit / Billing Agreement

The following table outlines the possible SFCC actions based on the response of the CyberSource gateway. Each client may choose to handle the response code differently.

Response	DW Storefront Action	Cyber-Source Code	CYB suggested response
Successful transaction.	Continue Checkout	100	
<b>Validation Errors</b>			
Request is missing one or more fields	Should not occur as validation should catch this Show user “denied” error message	101	See the reply field’s missingField_0...N for which fields are missing. Resend the

	Log error message into SFCC logs		request with the complete information.
One or more fields in the request contain invalid data.	Should not occur as validation should catch this Show user “denied” error message Log error message into SFCC logs	102	See the reply field’s invalidField_0...N for which fields are invalid. Resend the request with the correct information.
<b>System Errors</b>			
General system failure.	Show user “Unable to process – Call Customer Service” error message ,Log error	150	Wait a few minutes and resend the request.
The request was received but there was a server time-out.	Show user “Unable to process – Call Customer Service” error message ,Log error	151	Wait a few minutes and resend the request.
The request just wait and then timeout, ends up as exception on the SFCC script	This could be one of the unique scenarios where CyberSource waits for the Merchant’s bank to authorize the order and exceeds timeout sets at the SFCC. This ends up into SOAP exception. Client code can handle this scenario differently.	Script sets Reason Code to 999	Handle at client’s end depending on business rules associated with this scenario.
<b>Authorization denied errors</b>			
PayPal rejected the transaction.	Show user “Unable to process – Call Customer Service” error message Log error message into SFCC logs	223	

General decline by PayPal.	Show user “Unable to process – Call Customer Service” error message Log error message into SFCC logs	233	Request a different form of payment option at PayPal Website.
<b>Gateway Account problem</b>			
There is a problem with your CyberSource merchant configuration.	Show user “Unable to process – Call Customer Service” error message Log error message into SFCC logs	234	Do not resend the request. Contact Customer Support to correct the configuration problem.
PayPal rejected the transaction. A successful transaction was already completed for this PayPal Token value.	Show user “Unable to process – Call Customer Service” error message Log error message into SFCC logs	238	
<b>Fraud Management</b>			
The order is marked for review by Decision Manager.	Proceed with checkout Leave SFCC order “unconfirmed”	480	
The order is rejected by Decision Manager.	Show user “Unable to process – Call Customer Service” error message Log error message into SFCC logs	481	

#### CyberSource PayPal / PayPal Credit Transactional Flow:

**Step 1:** Sessions Service request and reply— accept item object, bill to, ship to objects, purchase data to generate the PayPal payment transaction ID.

**Step 2:** Check Status Service request and reply — accept request id, payer id and PayPal payment transaction ID generated by sessions service and return address verification response, payer details and address details.

**Step 3:** Order Service request and reply— accept payer id and order details to generate order setup response required to authorize the request.

**Step 4:** Authorization service request and reply — accept order related details and authorize the order amount.

**Step 5:** Capture service request and reply — capture the amount authorized by Authorization service.

CyberSource PayPal Billing Agreement Transactiona Flow:

**Step 1:** If Billing Agreement exists for the customer Step 2 will be executed. If not Session service will execute.

**Step 2:** Billing agreement Service request and reply – accept request id of session service.

**Step 3:** Check Status Service request and reply – accept Customer billing agreement ID.

**Step 4:** Sale Service request and reply – accept customer billing agreement ID.

**Use Case 1:** Checkout using PayPal Express Checkout on Cart Page  
“PayPal Checkout” button has been added on SFCC reference Site Genesis.

**Use Case 2:** Checkout using “PayPal Checkout” button on mini cart

**Use case 3:** Checkout using Pay Pal as payment method on Payment page.

**Use case 4:** Checkout using PayPal Credit as payment method on Payment page.

Use case 5: Checkout using PayPal Billing agreement as payment method on Payment page.

## Conversion Detail Report

This job picks orders which are initially having decision as REVIEW in cybersource and later their decision modified as “ACCEPT” or “REJECT” in last 24 hours. The order status is updated in Demandware through the incoming xml of conversion detail report.

List of use cases and appropriate action taken listed below:

Use case scenarios	Result
Incoming order status is set to “ACCEPT”	Read order from the order table; Update the status in demandware The order statuses modified after conversion detail report ran successfully Order Confirmation Status as CONFIRMED Order Status as NEW/OPEN Export Status as Ready For Export
Incoming order status is set to “REJECT”	Read order from the order table; update the status in demandware The order statuses modified after conversion detail report ran successfully Order Status as CANCELLED

## Alternate Payment Check Status Job

List of use cases and appropriate action taken listed below:

Decision	Reason Code	Payment Status	Description	Result
ACCEPT	100	COMPLETED authorized settled	Successful transaction.	Read order from the order table; Update the status in demandware The order statuses modified after conversion detail report ran successfully Order Confirmation Status as CONFIRMED Order Status as NEW/OPEN Export Status as Ready For Export
ACCEPT	100	PENDING pending	Successful transaction.	No Demandware Order status updated
ACCEPT	100	ABANDONED TRADE_NOT_EXIST Failed abandoned	Successful transaction.	Oder FAILED in Demandware
REJECT/FAILED	102,150,203, 204,233	failed	One or more fields in the request contain invalid data. Processor declined the transaction because of funding source problems, or the transaction was flagged as high risk. Payment declined because of insufficient funds in the account Processor declined the transaction because of tax errors or government compliance errors	Oder FAILED in Demandware

## CyberSource Decision and DW Order Status Mapping

CYB Status	Order Status	Confirmation status	Payment status	Export status
Auth/Accept	New/Open	Confirmed	Not Paid	Ready for export
Capture	New/Open	Confirmed	Paid	
Pending/Review	Created	Not Confirmed	Not Paid	Not Exported
Reject/Decline	Failed	Not confirmed	Not Paid	Not Exported

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## Limitations, Constraints

- Multiple shipments. Tax rates are only calculated for a single shipment per order. To implement tax service calculation for multiple shipments, a separate web service call must be made for each distinct “ship to” location.
- Custom User Interface components to correct address validation (DAV/AVS) errors and/or omissions or to confirm “standardized” address format corrections. All pertinent data is collected, but because each merchant will have customized specifications how to deal with such information (or use other 3<sup>rd</sup> party solutions to play the same role); no default user interface is provided.
- Cartridge does not provide changes to support the styling of error and validation messages. Merchant need to make the required changes to meet the style guide for error and validation messaging as per their storefront implementation
- Cartridge supports DW provided form field validations only

Currently implemented with limitations and constraints:

- Incase user has enabled Decision Manager from CyberSource console for cards, its mandatory to enable Decision Manager from Business Manager Site Preference path: Site -> Site Preferences -> Custom Preferences -> Cybersource -> Decision Manager Enable for Card -> check/uncheck as per decision manager enabled/disabled in CyberSource console.
- Merchant to decide “Master Card Auth Indicator” as “Pre Authorization” “FinalAuthorization ” or “Undefined” from site preferences for master card.
- Cybersource must take into account Fraud and Risk details, AVS and card security codes available in Payload during transaction authorization, Cartridge will not be performing any additional security/risk checks except the existing CC Auth response handling
- **Unit Test Interface:**
  1. Unit Test Services are developed for the standalone testing purpose only and should not be used directly into production
  2. Custom user interface for view, update and delete subscription. All functionalities are created and working in stand-alone mode in **CYBServicesTesting.xml** pipeline. They have to be customized and integrated as per the merchant specific needs

- 3. Custom user interface for Full Authorization Reversal. Full Authorization reversal is created and working in stand-alone mode in **CYBServicesTesting.xml** pipeline. It has to customized and integrated as per the merchant specific needs
- **Alipay Authorization:**
  1. Testing of Alipay is possible only with Test data provided by CyberSource such as Reconciliation ID that is getting passed to Alipay Initiate Service to get the response back. We don't have Alipay simulator and access to Alipay live environment
  2. CNY is the only hardcoded currency value that has been used for Alipay Domestic requests
  3. Order should remain in same state if user closes the browser while transaction is in progress. For example: For Alipay, if user closes the browser while coming back from simulator and before coming to order confirmation page, order will remain in created state
  4. Alipay Authorization for global country Support requires setting ALIAS URL in SFCC in order to complete transaction.
- **Secure Acceptance:**
  1. Limit storefront order setting must be disable if Merchant post URL is configured
  2. Cartridge supports five types of cards in secure acceptance (Visa, master card, amex, maestro international, discover)
- **Visa Checkout:**
  1. "Save Card" option will not be available in the demandware checkout journey, which means tokenization will not be applicable for Visa Transactions
- **Apple/Android Pay REST Interface:**
  1. Tokenization and Payer authentication is not supported with Apple Pay Transactions
  2. Developed REST Interface are just standalone services only and does not support direct integration with DW native Apple Pay Web functionality, however interface is developed in such a way that Merchant can use individual methods to integrate with DW Native Apple Pay web
  3. Tokenisation is supported for AndroidPay, however subscription ID is only stored into order level attributes
- **Bank Transfer**
  1. Bank Transfer functionality is specific to APMs with sale and check status service. If service implementation changes apart from sale and check status or service input changes are required for any other APM, code changes would be required to made to successfully execute the Bank Transfer functionality

## Compatibility

This cartridge is tested with Demandware Site genesis release code base 17.2 and compatibility mode of 16.2.

# Implementation Guide

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## Custom Code

**Pre-Requisite:** Make sure the Pipeline cartridges of site site-genesis is (say, e.g. app\_storefront\_pipelines and "int\_cybersource, int\_cybersource\_pipeline" are specified in Site Settings path under Manage Sites > Merchant Site as per current site

Modify the references of actual storefront cartridges in cybersource cartridges under CybersourceConstants.ds during cybersource integration. Cybersource cartridge is developed assuming storefront cartridge naming conventions as:

- app\_storefront\_core
- app\_storefront\_pipelines

## Generic Section

### Pipeline - COPlaceOrder.xml

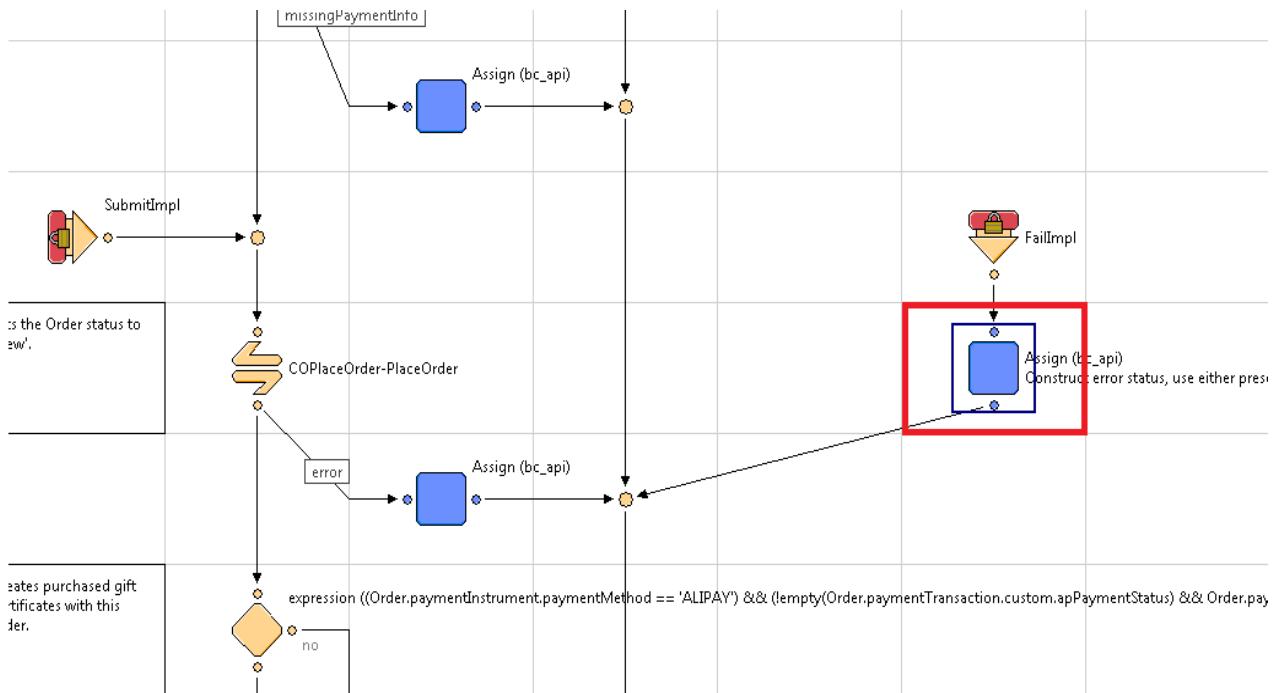
#### Update “start” node

Remove call node CSRF-Validate after place order

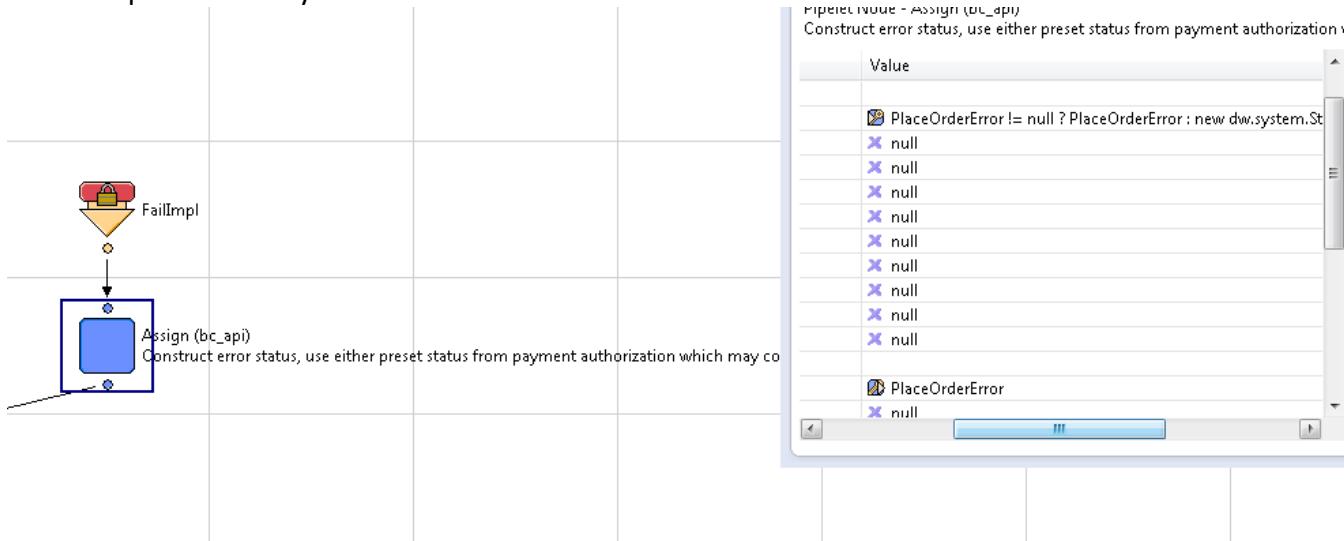
[Note: CSRF node needs to be removed because of Third party URL redirection]

#### Update “FailImpl” node

Add an assign node in COPlaceOrder-FailImpl to show the error message on screen in case of error scenarios.

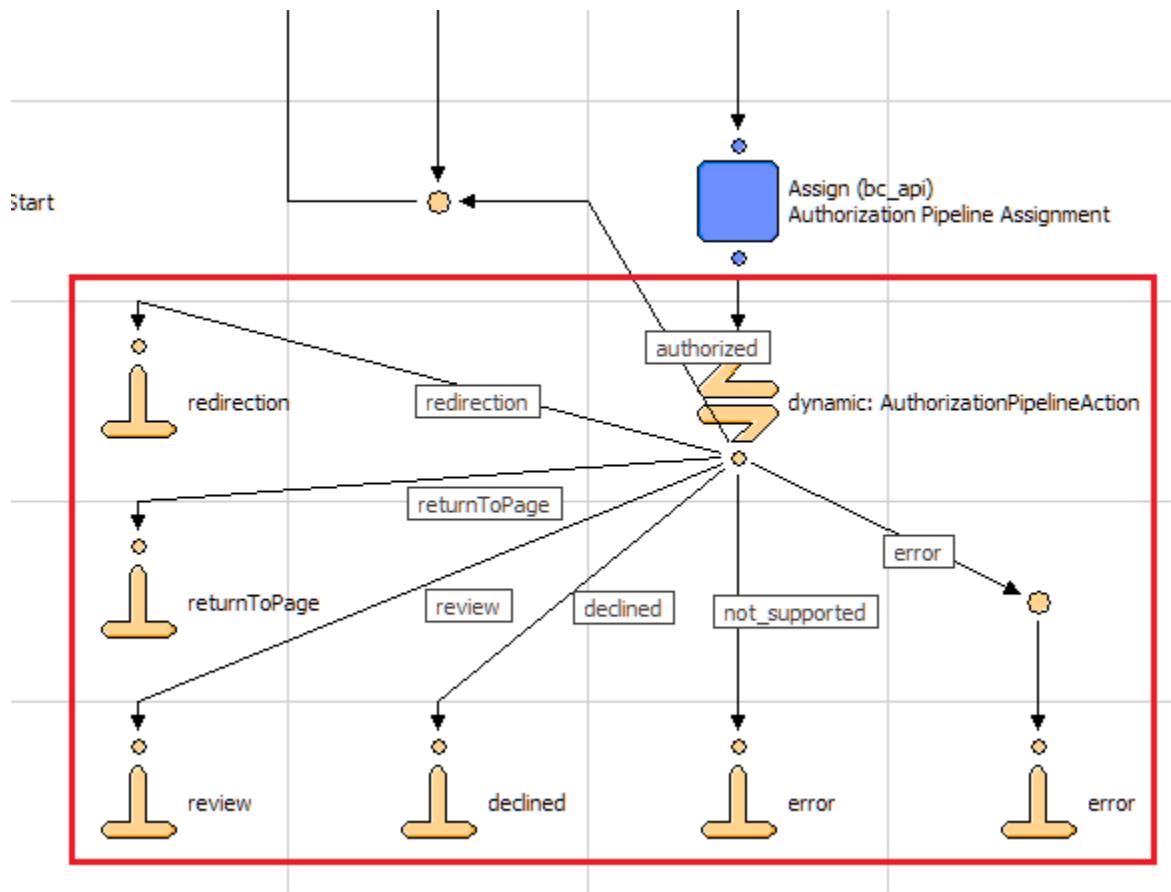


- Assign PlaceOrderError != null ? PlaceOrderError : new dw.system.Status(dw.system.Status.ERROR, "confirm.error.declined") value in the pipeline Input Dictionary as shown below.



#### Update “HandlePayments” node

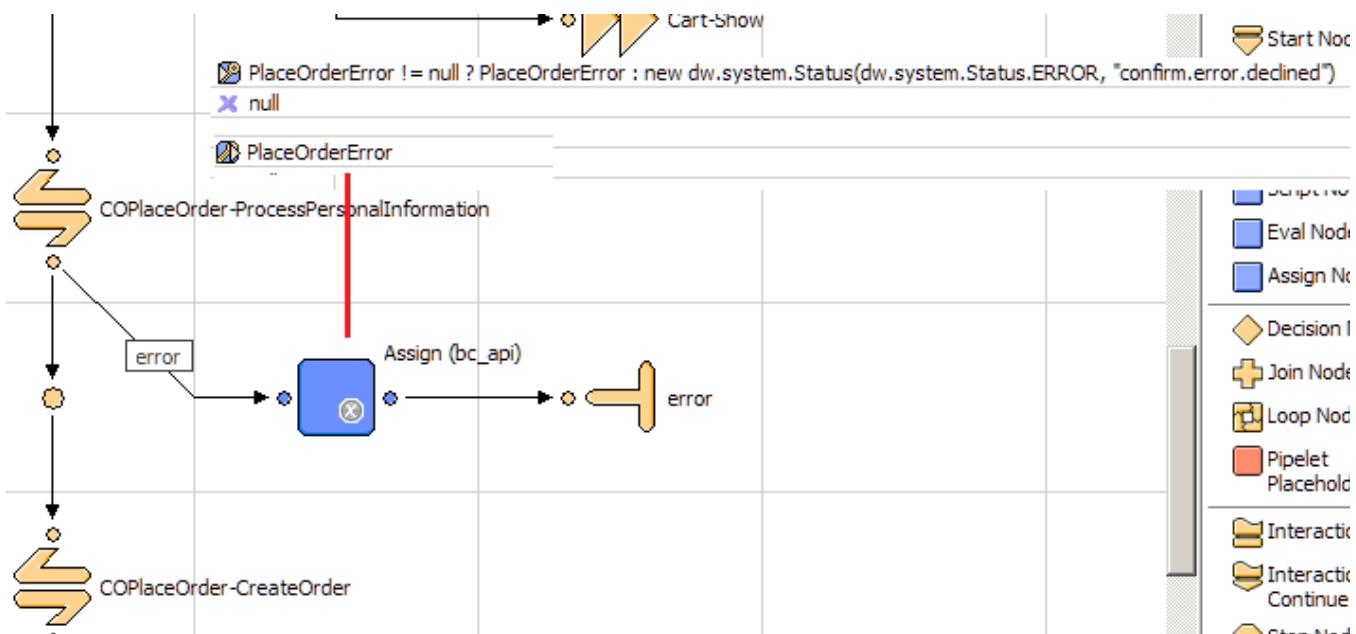
Update HandlePayments pipeline to handle response code returned by CyberSource. Add different end nodes to handle various response returned by service call.  
 [Note: Below changes are generic to all Payment method]



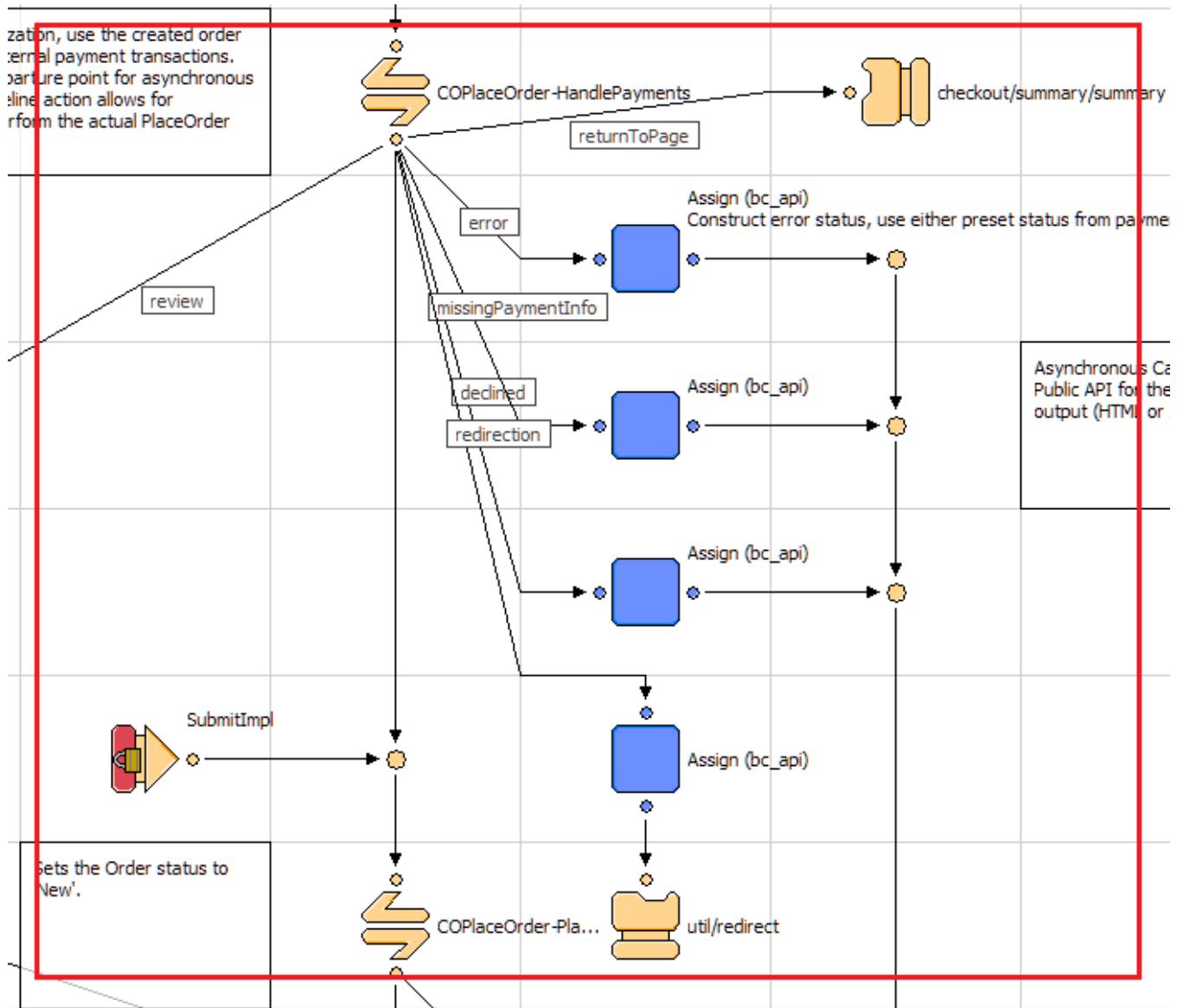
#### Update "start" node

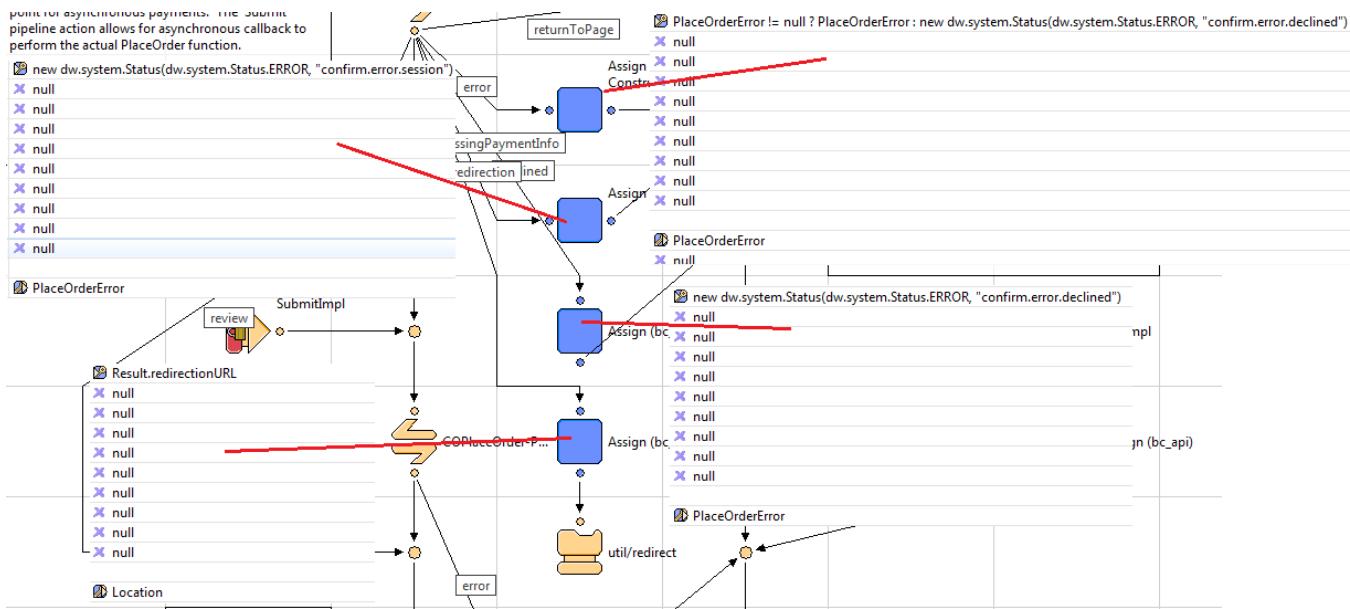
Handle different responses returned from CyberSource along with tracing error in case of different scenarios

- Update assign node of PlaceOrder error with null check connected to COPlaceOrder-ProcessPersonalInformation as `PlaceOrderError != null ? PlaceOrderError : new dw.system.Status(dw.system.Status.ERROR, "confirm.error.declined")` for error connector pipelet



- Add assign node and set the value of PlaceOrderError as **new dw.system.Status(dw.system.Status.ERROR, "confirm.error.declined")** for declined connector pipelet
- Add a new transition for “review” and connect it just after COPlaceOrder-PlaceOrder and before COPlaceOrder-CreateGiftCertificates
- Add a new transition for “redirection” and set Input : **Result.redirectionURL** and output : **Location**, connect this interaction node with <SG Core cartridge>/cartridge/template/default/util/redirect [for Paypal billing agreement/Klarna/Bank transfer]
- Add a new transition for “returnToPage” and connect it to interation node : <SG Core cartridge>\cartridge\templates\default\checkout\summary [for SA Iframe]  
[Note: Below changes are generic for different payment method handling]





### Add “ReviewOrder” Node

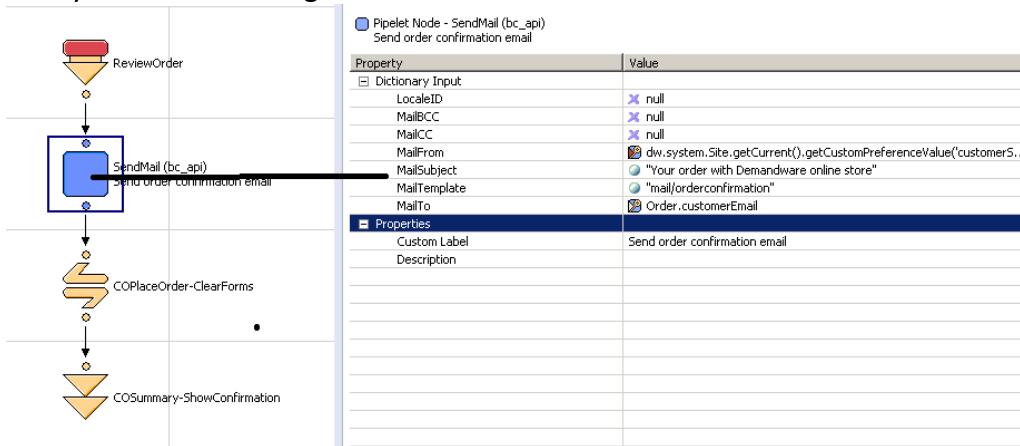
1. Add new private node “ReviewOrder”
2. Add send Mail pipelet:

Values of the fields are:

- MailSubject : "Your order with Demandware online store"
  - MailTemplate : "mail/orderconfirmation"
  - MailTo : Order.customerEmail
  - MailFrom :
- dw.system.Site.getCurrent().getCustomPreferenceValue('customerServiceEmail')

3. Add call node COPlaceOrder-ClearForms
4. Add jump Node COSummary-ShowConfirmation

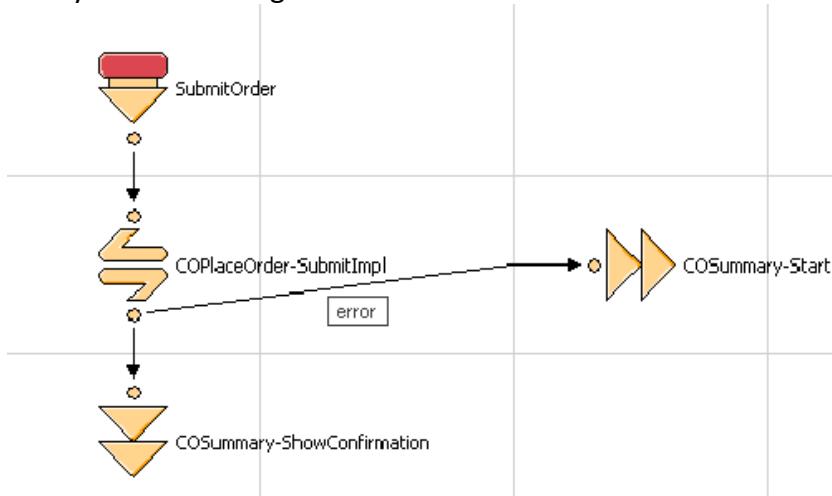
Kindly refer to following screen shot:



### Add “SubmitOrder” Node

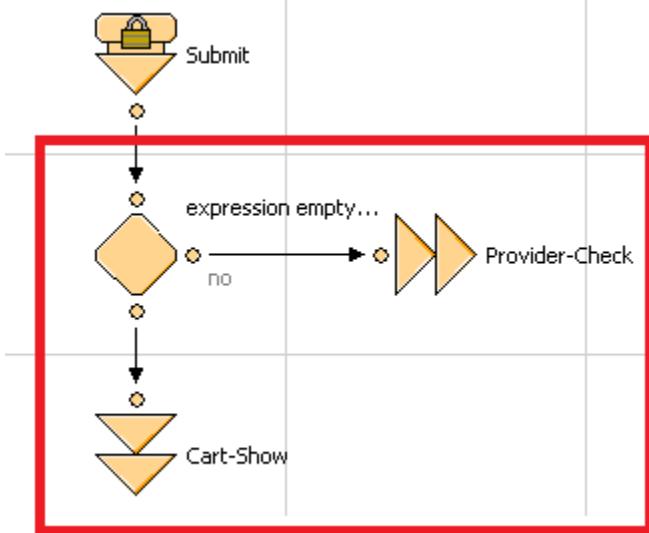
1. Add new private node “**SubmitOrder**”
2. Add call node with value **COPlaceOrder-SubmitImpl**
3. Add jump Node **COSummary-Start** on error transition”
4. Add jump Node **COSummary-ShowConfirmation** on success

Kindly refer following screen shot



### Update “Submit” node

1. Remove existing logic (if any)
2. Add decision node to check “provider” exists in CurrentHttpParameterMap  
empty(CurrentHttpParameterMap.provider.stringValue)
3. If exists then call Provider-Check
4. If does not exists call Cart-Show to redirect user to cart page [no error message displayed]. This indicates either some wrong configuration or user tries to modify the URL



### Update “CreateOrder” node

- Include an assign node just after the createorder2 pipelet. Refer to the screenshot below for

more details:

The screenshot shows a BPMN process diagram and its corresponding properties panel.

**BPMN Diagram:**

```

graph TD
    CreateOrder[CreateOrder] --> Expression{expression !empty(Order)}
    Expression -- yes --> Transaction[T]
    Transaction --> Assign[Assign(bc_api)]
    Transaction -- error --> Error(error)
    Expression -- no --> Error
  
```

**Properties Panel:**

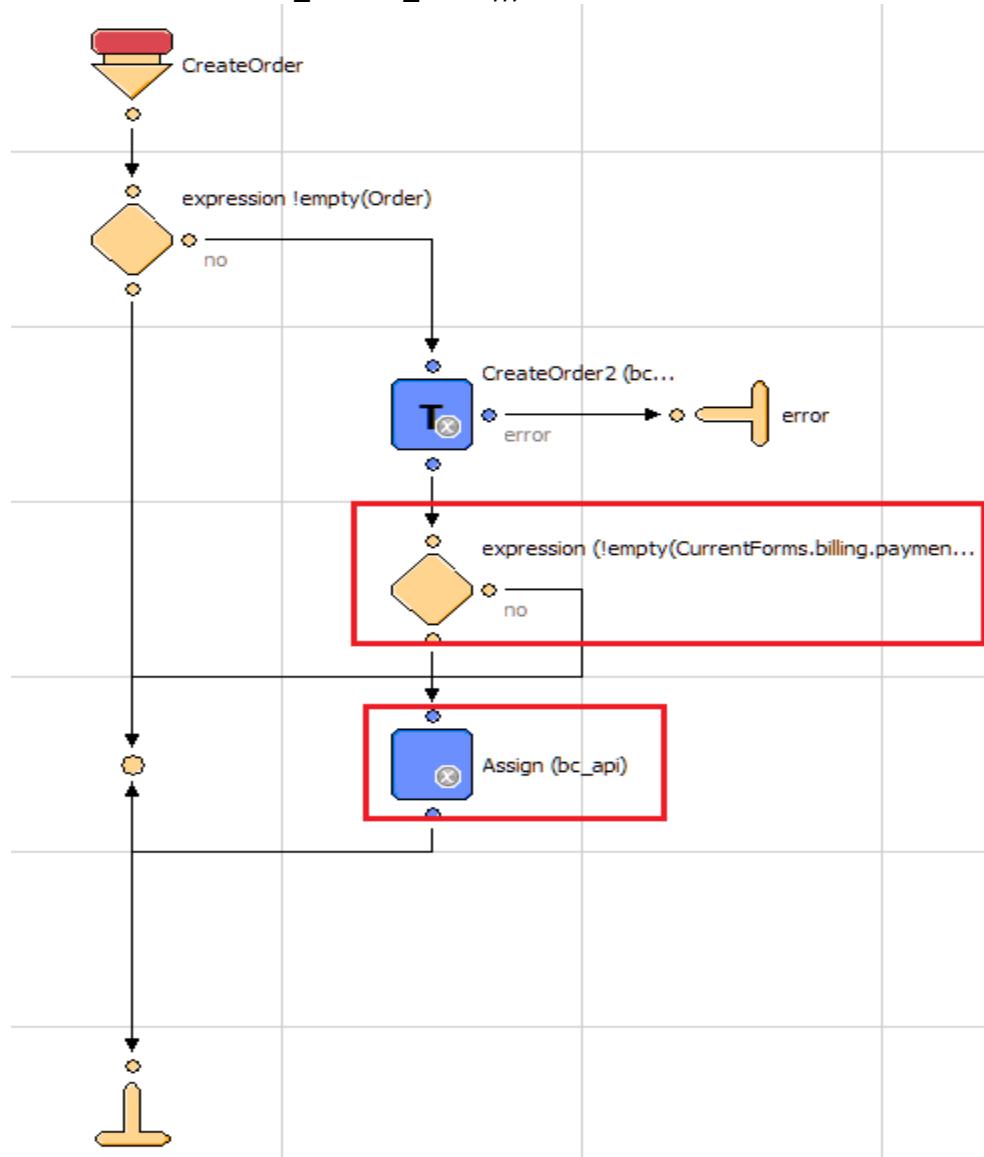
**Pipelet Node - Assign (bc\_api)**

Property	Value
Configuration	<input checked="" type="radio"/> Transactional
Dictionary Input	<ul style="list-style-type: none"> <li>From_0: Order</li> <li>From_1: null</li> <li>From_2: null</li> <li>From_3: null</li> <li>From_4: null</li> <li>From_5: null</li> <li>From_6: null</li> <li>From_7: null</li> <li>From_8: null</li> <li>From_9: null</li> </ul>
Dictionary Output	<ul style="list-style-type: none"> <li>To_0: Basket</li> <li>To_1: null</li> <li>To_2: null</li> <li>To_3: null</li> <li>To_4: null</li> </ul>

Note: Below mentioned change is required if merchant is using Paypal, Alipay payment methods along with Credit Card Payment methods. COPlaceOrder-CreateOrder node need to update as mentioned below

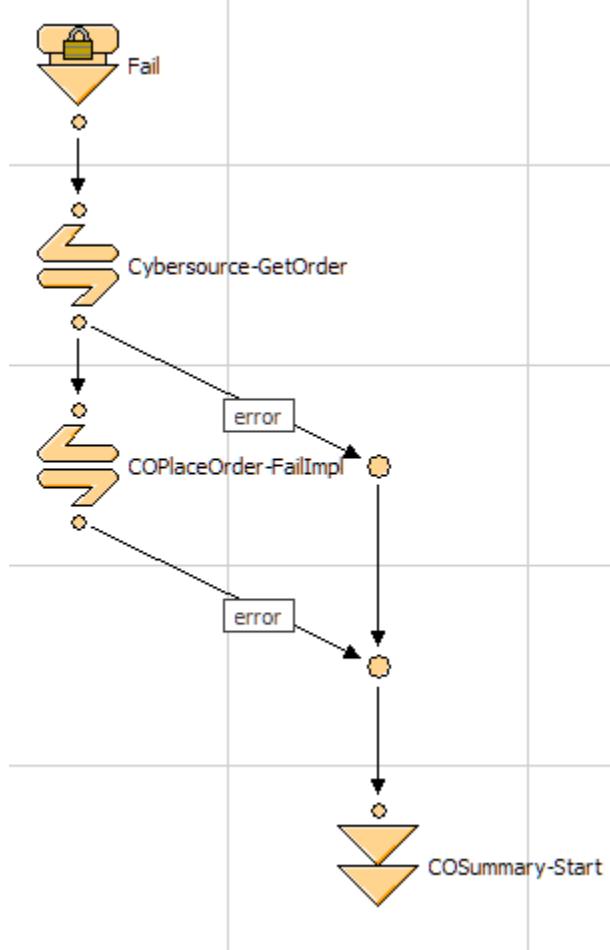
Add below condition in the expression node to set the value of Order into Basket Object for Credit Card as payment methods.

```
(!empty(CurrentForms.billing.paymentMethods.selectedPaymentMethodID) &&  
(CurrentForms.billing.paymentMethods.selectedPaymentMethodID.value.equals(dw.order.PaymentInstrument.METHOD_CREDIT_CARD)))
```



### Update “Fail” Node

1. Update Fail Node just be disconnecting it from Submit node as Submit node is updated in above.

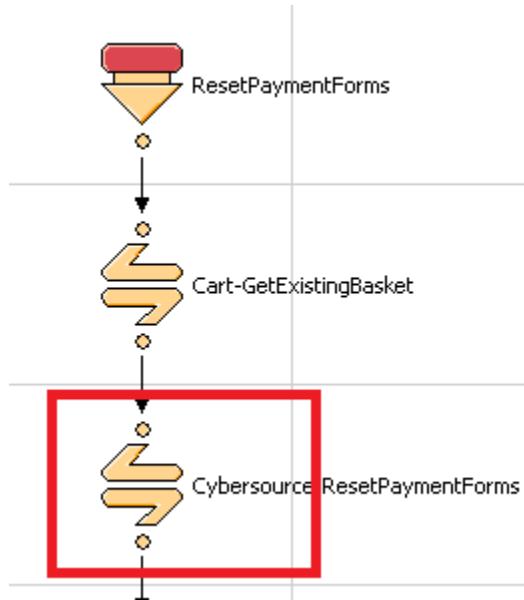


### Pipeline - COBilling.xml

#### Update “ResetPaymentForms” function

Invoke Cybersource-ResetPaymentForms after Cart-GetExistingBasket

1. This pipeline is used to remove all the payment instruments except the selected one.

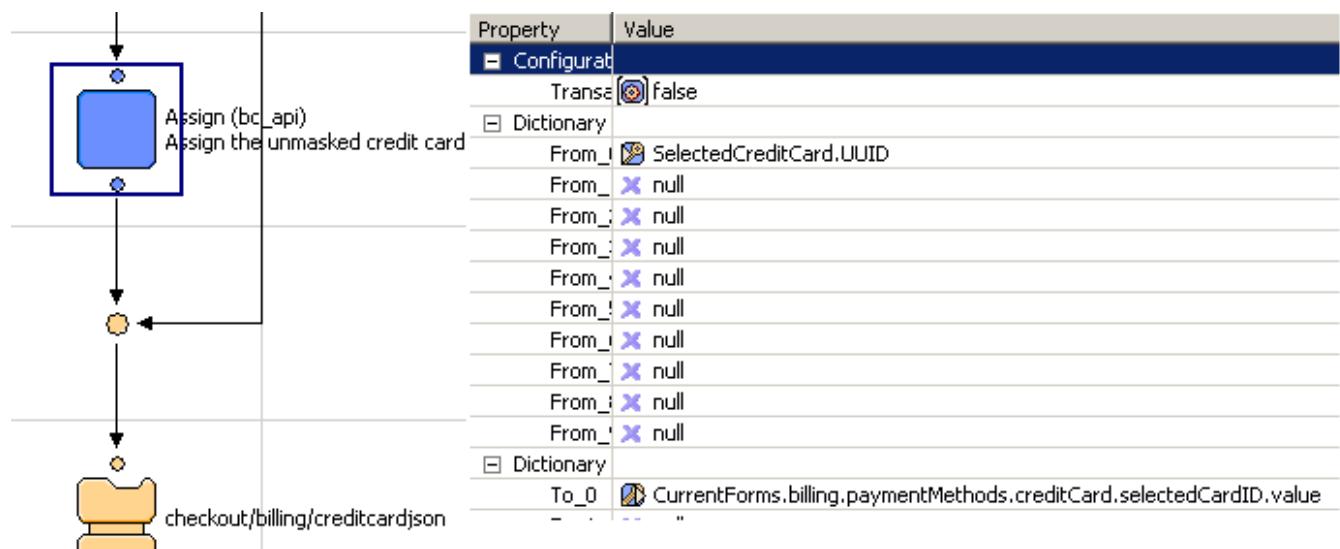


2. Delete pipelet called to remove payment instruments of BML and clear form elements of BML

#### Update "SelectCreditCard" node

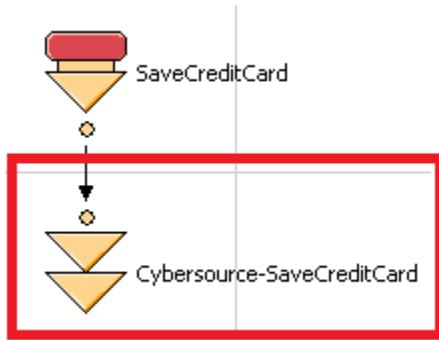
Add assign node just above interaction node checkout/billing/creditcardjson

Output	Input
CurrentForms.billing.paymentMethods.creditCard.number.value	SelectedCreditCard.UUID



#### Update "SaveCreditCard" Node

1. Remove existing logic of save credit card
2. Call Cybersource-SaveCreditCard



### Update DuplicateCheck.ds

Update the file present at <SG Core Cartridge>\cartridge\scripts\account\payment to check for duplicate card and avoid duplicate entry in My Account section

```

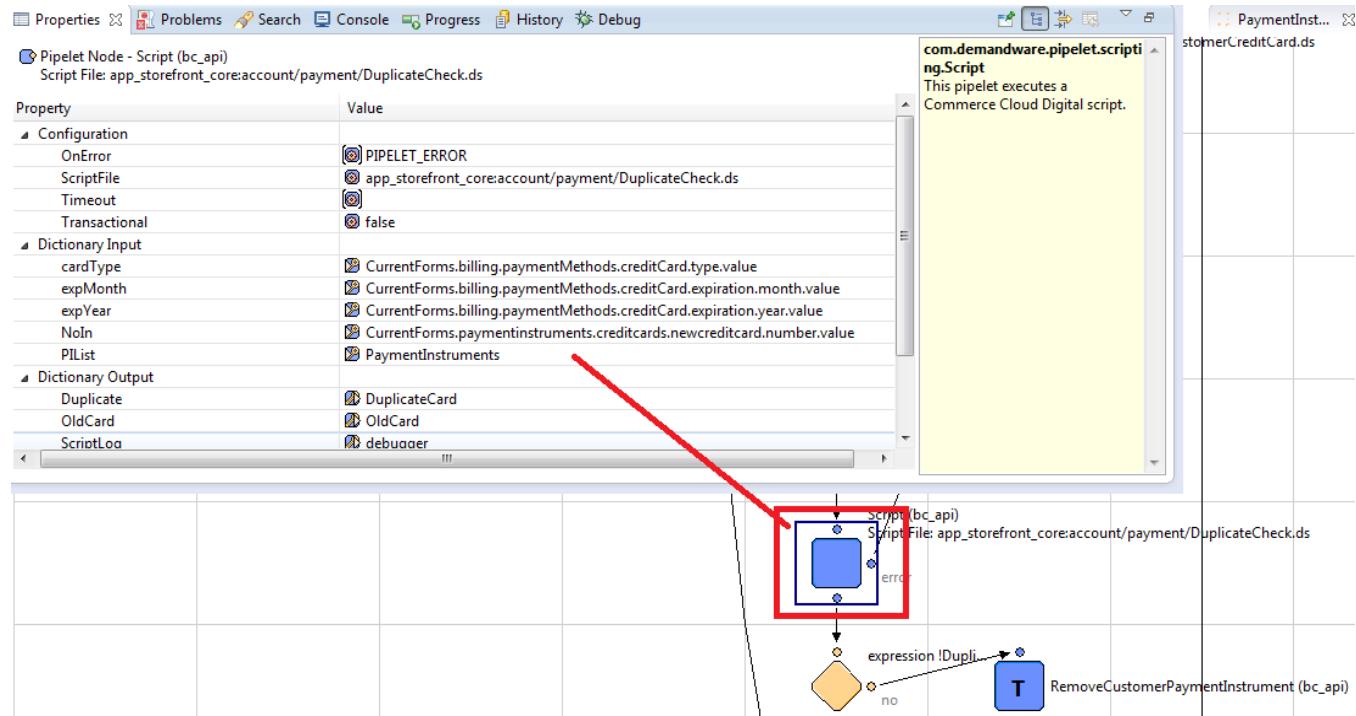
/*
 * DuplicateCheck.ds
 *
 * This script checks for a duplicate card number against the list
 * of payment instruments for the customer. If there is a duplicate,
 * return the payment instrument that already exist.
 *
 * @input Noln : String
 * @input expMonth : Number
 * @input expYear : Number
 * @input cardType : String
 * @input PIList : dw.util.Collection
 * @output Duplicate : Boolean
 * @output OldCard : dw.order.PaymentInstrument
 *
 */
importPackage( dw.system );

function execute( args : PipelineDictionary ) : Number
{
    args.Duplicate = false;
    var ccNumber = args.Noln;
    for each(var card in args.PIList) {
        var creditcardNo = card.getCreditCardNumber();
        if (card.creditCardExpirationMonth === args.expMonth && card.creditCardExpirationYear === args.expYear
            && card.creditCardType === args.cardType && creditcardNo.substring(creditcardNo.length-
4).equals(ccNumber.substring(ccNumber.length-4))) {
            args.Duplicate = true;
            args.OldCard = card;
            break;
        }
    }

    return PIPELET_NEXT;
}


```

This file is getting used in PaymentInstrument.xml pipeline. Newly added input parameters would be as follow



## JS file – billing.js [compiled to app.js]

### Update “populateCreditCardForm” function

Add new parameter “selectedPaymentMethod” and add Switch condition to handle different APM’s as below:

[Note: all app.js changes are similar to billing.js, please refer the below section for app.js changes, this method contains generic code used for different payment methods as given below]

```
function populateCreditCardForm(cardID, selectedPaymentMethod) {
    // load card details
    var url = util.appendParamToURL(Urls.billingSelectCC, 'creditCardUUID', cardID);
    ajax.getJson({
        url: url,
        callback: function (data) {
            if (!data) {
                window.alert(Resources.CC_LOAD_ERROR);
                return false;
            }

            switch (selectedPaymentMethod) {
                case "SA_REDIRECT":
                    $('.payment-method-expanded .saCCToken .field-wrapper').val(data.selectedCardID);
            }
        }
    });
}
```

```

        $("#dwfrm_billing_paymentMethods_creditCard_selectedCardID").val(data.selectedCardID);
        break;
    case "SA_IFRAME":
        $('.payment-method-expanded .salframeCCToken .field-wrapper').val(data.selectedCardID);

        $("#dwfrm_billing_paymentMethods_creditCard_selectedCardID").val(data.selectedCardID);
        break;
    case "CREDIT_CARD":
        setCCFields(data);
        break;
    default:
        setCCFields(data);
    }
}
});
}

```

### Update "#creditCardList" on change function

Update the method inside exports.init () by adding parameter "selectedPaymentMethod":

```

// select credit card from list
$('#creditCardList').on('change', function () {
    var cardUUID = $(this).val();
    if (!cardUUID) {$($checkoutForm).find('input[name$="_selectedCardID"]').val(""); return;}
    populateCreditCardForm(cardUUID,selectedPaymentMethod);

    // remove server side error
    $('.required.error').removeClass('error');
    $('.error-message').remove();
});

```

### Update "setCCFields" "function

Get selected payment method from input type and set CVN, expiry month and expiry year based on selected payment method [this change will work for Silent Post and credit card]

```

function setCCFields(data) {
    var $creditCard = $('[data-method="CREDIT_CARD"]');
    $creditCard.find('input[name$="creditCard_owner"]').val(data.holder).trigger('change');
    $creditCard.find('select[name$="_type"]').val(data.type).trigger('change');
    $creditCard.find('input[name$="_creditCard_number"]').val(data.maskedNumber).trigger('change');
    var selectedPaymentMethodID = $('input[name$="_selectedPaymentMethodID"]:checked').val();
    if(selectedPaymentMethodID == 'SA_SILENTPOST'){
        $creditCard.find('[name$="_month"]').val(data.expirationMonth);
        $creditCard.find('[name$="_year"]').val(data.expirationYear);
    }
    else{
        $creditCard.find('[name$="_month"]').val(data.expirationMonth).trigger('change');
        $creditCard.find('[name$="_year"]').val(data.expirationYear).trigger('change');
    }
}

```

```

        }
        $creditCard.find('input[name$="_cvn"]').val('').trigger('change');
        $creditCard.find('[name$="creditCard_selectedCardID"]').val(data.selectedCardID).trigger('change');
        $creditCard.find("input[name$='_cvn']").val("");
    }
}

```

### Update “updatePaymentMethod” function

Based on payment method Id selected, this method will hide.show button or checkboxes for different APM to make it visible on billin page.

[Note: This method contains generic code for different payment methods as given below]

```

function updatePaymentMethod(paymentMethodID) {
    var $paymentMethods = $('.payment-method');
    $paymentMethods.removeClass('payment-method-expanded');
    var dataMethod = paymentMethodID;
    if (paymentMethodID=='SA_SILENTPOST') {
        dataMethod = 'CREDIT_CARD';
    }
    var $selectedPaymentMethod = $paymentMethods.filter("[data-method='" + dataMethod + "']");
    if ($selectedPaymentMethod.length === 0) {
        $selectedPaymentMethod = $('[data-method="Custom"]');
    }
    if (paymentMethodID=="VISA_CHECKOUT") {
        $(".continue-place-order").hide();
        $(".visacheckoutbutton").show();
    }
    else if (paymentMethodID=="PAYPAL" || paymentMethodID=="PAYPAL_CREDIT") {
        $("#billingAgreementCheckbox").attr('checked',false);
        $(".continue-place-order").hide();
    }
    else {
        $(".continue-place-order").show();
        $(".visacheckoutbutton").hide();
    }
    if (paymentMethodID=="CREDIT_CARD" || paymentMethodID=="SA_SILENTPOST") {
        $(".spsavecard").show();
    } else if ((paymentMethodID=="SA_REDIRECT" || paymentMethodID=="SA_IFRAME") &&
SitePreferences.TOKENIZATION_ENABLED) {
        $(".spsavecard").show();
    }
    else {
        $(".spsavecard").hide();
    }

    $selectedPaymentMethod.addClass('payment-method-expanded');

    // ensure checkbox of payment method is checked
    $('[name$="_selectedPaymentMethodID"]').removeAttr('checked');
}

```

```

$(`input[value=' + paymentMethodID + ']`).prop('checked', 'checked');

formPrepare.validateForm();
}

```

### Update “exports.init” function

Add below code snippet after formPrepare.init

```

formPrepare.init({
    formSelector: 'form[id$="billing"]',
    continueSelector: '[name$="billing_save"]'
});

var $ccContainer = $($checkoutForm).find(".payment-method").filter(function(){
    return $(this).data("method")=="CREDIT_CARD";
});
$($checkoutForm).find('input[name$="_selectedCardID"]').val("");
$($checkoutForm).find('input[name*="_number"]').val("");

$ccContainer.find('input[name*="_number"]').on('change',function(e){
    $($checkoutForm).find('input[name$="_selectedCardID"]').val("");
});
$ccContainer.find('input[name$="_owner"]').on('change',function(e){
    $($checkoutForm).find('input[name$="_selectedCardID"]').val("");
});
$ccContainer.find('select[name$="creditCard_type"]').on('change',function(e){
    $($checkoutForm).find('input[name$="_selectedCardID"]').val("");
});
$ccContainer.find('select[name*="expiration"]').on('change',function(e){
    $($checkoutForm).find('input[name$="_selectedCardID"]').val("");

    var selectedPaymentMethodID = $("input[name$='_selectedPaymentMethodID']:checked").val();
    var cardNumber = $($checkoutForm).find('input[name*="_number"]').val();
    if(cardNumber.indexOf('****') != -1 && selectedPaymentMethodID == 'SA_SILENTPOST'){
        $($checkoutForm).find('input[name*="_number"]').val("");
    }
});

var $ccNum = $ccContainer.find("input[name$='_number']");
// default payment method to 'CREDIT_CARD'
updatePaymentMethod((selectedPaymentMethod) ? selectedPaymentMethod : 'CREDIT_CARD');
$selectPaymentMethod.on('click', 'input[type="radio"]', function () {
    updatePaymentMethod($(this).val());
});

```

Update “**updatePaymentMethod**” function at line 84 and 501

Add below highlighted code snippet for bank transfer

```

} else if ((paymentMethodID=="SA_REDIRECT" || paymentMethodID=="SA_IFRAME") &&
SitePreferences.TOKENIZATION_ENABLED) {
    $(".spsavecard").show();
}
else {
    $(".spsavecard").hide();
}

var isBicRequired = $selectedPaymentMethod.data('bicrequired');
if(isBicRequired){
    $(".bic-section").show();
} else{
    $(".bic-section").hide();
}

$selectedPaymentMethod.addClass('payment-method-expanded');

```

## Form - customeraddress.xml

Include the following code just above the action events

```

<field formid="phone" label="profile.phone" description="address.phone.example" type="string" mandatory="true"
binding="phone" max-length="20"/>
<group formid="email">
    <field formid="emailAddress" label="profile.email" type="string" mandatory="true" regexp="^[\w.%+-]+@[\\w.-]+\.[\\w]{2,6}$" binding="email" max-length="50" missing-error="forms.address.email.invalid" range-error="forms.address.email.invalid" parse-error="forms.address.email.invalid" value-="" error="forms.address.email.invalid"/>
</group>

```

## Form - paymentinstruments.xml

Include address fromId just below new credit card Id

```
<include formid="address" name="customeraddress"/>
```

## Form – creditcard.xml

Set the default value of formid="saveCard" to false

```
<field formid="saveCard" label="creditcard.savecard" type="boolean" mandatory="false"
default-value="false" />
```

Add more year options as below:

```

<option optionid="2022" label="year.2022" value="2022"/>
<option optionid="2023" label="year.2023" value="2023"/>
<option optionid="2024" label="year.2024" value="2024"/>
<option optionid="2025" label="year.2025" value="2025"/>
<option optionid="2026" label="year.2026" value="2026"/>

```

```

<option optionid="2027" label="year.2027" value="2027"/>
<option optionid="2028" label="year.2028" value="2028"/>
<option optionid="2029" label="year.2029" value="2029"/>
<option optionid="2030" label="year.2030" value="2030"/>
<option optionid="2031" label="year.2031" value="2031"/>
<option optionid="2032" label="year.2032" value="2032"/>
<option optionid="2033" label="year.2033" value="2033"/>
<option optionid="2034" label="year.2034" value="2034"/>
<option optionid="2035" label="year.2035" value="2035"/>
<option optionid="2036" label="year.2036" value="2036"/>
<option optionid="2037" label="year.2037" value="2037"/>

```

## Template - paymentmethods.isml

1. Add code to declare CyberSource constant file

**Line 4 to Line 6**

```

<iscomment> TEMPLATENAME: paymentmethods.isml </iscomment>
<isinclude template="util/modules"/>
<isscript>
    var CybersourceConstants =
        require('int_cybersource/cartridge/scripts/utils/CybersourceConstants');
</isscript>
<isif condition="${pdict.OrderTotal > 0}">

```

2. Add conditional statement to show declined message for paypal, visa checkout and secure acceptance

**Line 14 to Line 16**

```

<legend>
    ${Resource.msg('billing.paymentheader','checkout',null
    )}
    <div class="dialog-required"> <span
        class="required-indicator">&#8226;
    <em>${Resource.msg('global.requiredfield','locale',null)}</em></span></div>
    </legend>
    <isif condition="${pdict.PaypalSetServiceError != null ||

    pdict.VisaCheckoutError != null || pdict.SecureAcceptanceError != null}">
        <div class="error-
    form">${Resource.msg('confirm.error.declined','checkout',null)}</div>
    </isif>

    <div class="payment-method-options form-
    indent">

```

```
<isloop
items="${pdict.CurrentForms.billing.paymentMethods.selectedPaymentMethodID.options}"
var="paymentMethodType">
```

3. Remove red highlighted code and replace with a condition to display bank transfer payment methods

Line 28

```
<isset name="radioID" value="${paymentMethodType.value}" scope="page"/>
<div class="field-wrapper">
    <input id="is-${radioID}" type="radio" class="input-radio <isif
condition="${paymentMethodType.object.paymentProcessor.ID.equalsIgnoreCase("bank_transfer")} == true
">bank-transfer</isif>" name="${pdict.CurrentForms.billing.paymentMethods.selectedPaymentMethodID.htmlName}"
value="${paymentMethodType.htmlValue}" <isif condition="${paymentMethodType.value ==
pdict.CurrentForms.billing.paymentMethods.selectedPaymentMethodID.htmlValue}">checked="checked"</isif> />
    <input id="is-${radioID}" type="radio" class="input-radio <isif
condition="${paymentMethodType.object.paymentProcessor.ID.equalsIgnoreCase("bank_transf
er")} == true }">bank-transfer</isif"
name="${pdict.CurrentForms.billing.paymentMethods.selectedPaymentMethodID.htmlName}"
value="${paymentMethodType.htmlValue}" <isif condition="${paymentMethodType.value ==
pdict.CurrentForms.billing.paymentMethods.selectedPaymentMethodID.htmlValue}">checked="checked"</isif> /> </div>
```

4. Remove Credit card and bml payment method section as highlighted below

Remove code from line 44 to 94

```
<iscomment>
    Credit card block
    -----
</iscomment>

<div class="form-row required">
    <label>
        <span class='required-indicator'>${Resource.msg('billing.requiredIndicator','checkout',null)}</span>
        <span>${Resource.msg('billing.creditcardlistexpdate','checkout', null)}</span>
    </label>
```

5. Add include for countries file

Line 88

```
<isscript>
    var currentCountry = require('~/cartridge/scripts/util/Countries').getCurrent(pdict);
</isscript>
```

6. Remove code using following reference

Line 46 to Line 90

```

<isdynamicform
formobject="${pdict.CurrentForms.billing.paymentMethods.creditCard.expiration}"
formdata="${currentCountry.dynamicForms.expirationInfo}">
</div>
<isscript>
var help = {

<div class="form-row form-caption">
<isinputfield
formfield="${pdict.CurrentForms.billing.paymentMethods.bml.termsandconditions}"
type="checkbox"/>
</div>
</div>

```

## 7. Add below code for paypal changes

```

<isinclude template="common/paymentmethods"/>
<iscomment>
    Custom processor
-----
</iscomment>

<div class="payment-method <isif condition='${!empty(pdict.selectedPaymentID) && pdict.selectedPaymentID==CybersourceConstants.METHOD_PAYPAL}'>payment-method-expanded</isif>" data-method="PAYPAL">
    <!-- Your custom payment method implementation goes here. -->
    <isif
        condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('paypalBillingAgreements') && !empty(pdict.CurrentCustomer.profile) && !empty(pdict.CurrentCustomer.profile.custom.billingAgreementID)}>
        <input type="image"
            src="https://www.paypal.com/en_US/i/btn/btn_xpressCheckout.gif" alt="PayPal Express"
            class="billingAgreementExpressCheckout"/>
        <iselse>
            <div id="paypal-button-container"></div>
        </isif>

        <isif condition="${pdict.CurrentCustomer.authenticated && dw.system.Site.getCurrent().getCustomPreferenceValue('paypalBillingAgreements')}>
            <isif
                condition="${!empty(pdict.CurrentCustomer.profile.custom.billingAgreementID)}>
                    <input type="text" readonly="readonly" id="billingAgreementID"
                        value="${pdict.CurrentCustomer.profile.custom.billingAgreementID}"/>
                <iselse>
                    <input type="checkbox" name="billingAgreementCheckbox"
                        id="billingAgreementCheckbox">${Resource.msg('billing.billingagreement','checkout',null)}</input>
                </iselse>
            </isif>
        </isif>
    </div>

```

```

        </isif>
    </isif>
</div>
<div class="payment-method <isif condition='${!empty(pdct.selectedPaymentID) && pdct.selectedPaymentID==CybersourceConstants.METHOD_PAYPAL_CREDIT}'>payment-method-expanded</isif>" data-method="PAYPAL_CREDIT">
    <div id="paypal-credit-container"></div>
</div>

```

#### 8. Take the value of selected payment method PayPal from constant file

Line 147

```

<div class="payment-method <isif condition='${!empty(pdct.selectedPaymentID) && pdct.selectedPaymentID==CybersourceConstants.METHOD_PAYPAL}'>payment-method-expanded</isif>" data-method="Custom">
    <!-- Your custom payment method implementation goes here. -->
    ${Resource.msg('billing.custompaymentmethod','checkout',null)}
</div>

```

### Template – summary.isml

Below changes are generic for Secure Acceptance/Klarna\_credit/Device fingerprint

#### 1. Set summary page tag for Secure Acceptance Iframe

```

<iscontent type="text/html" charset="UTF-8" compact="true"/>
<isset name="summarypage" value="${true}" scope="page"/>
<isdecorate template="checkout/pt_checkout"/>

```

#### 2. Add below code above <isreportcheckout checkoutstep="\${5}"

checkoutname="\${'OrderSummary'}"/>

```

<isscript>
    var CybersourceConstants = require('int_cybersource/cartridge/scripts/utils/CybersourceConstants');
</isscript>
<isset name="klarnarequired" value="${false}" scope="page"/>
<isif condition="${!empty(pdct.Basket)}>
<isset name="LineCntr" value="${pdct.Basket}" scope="page"/>
<elseif condition="${!empty(pdct.Order)}>
<isset name="LineCntr" value="${pdct.Order}" scope="page"/>
</isif>
<isset name="summaryaction" value="${URLUtils.https('COSummary-Submit')}" scope="page" />
<script src="${URLUtils.staticURL('/lib/jquery/jquery-1.11.1.min.js')}" type="text/javascript"></script>
<isset name="paymentMethod" value="${null}" scope="page"/>
<isset name="isIFrame" value="${false}" scope="page" />
<isif condition="${!empty(LineCntr.getPaymentInstruments())}>
    <isloop items="${LineCntr.getPaymentInstruments()}" var="paymentInstr" status="loopstate">
        <isset name="paymentMethod" value="${dw.order.PaymentMgr.getPaymentMethod(paymentInstr.paymentMethod.ID)}" scope="page"/>

```

```

<isif
condition="${dw.order.PaymentMgr.getPaymentMethod(paymentInstr.paymentMethod).ID==CybersourceConstants.METHOD_SA_IFRAME}">
    <isset name="summaryaction" value="${URLUtils.https('COSummary-SubmitOrder')}" scope="page" />
        <isset name="isIFrame" value="${true}" scope="page" />
<elseif
condition="${CybersourceConstants.KLARNA_PAYMENT_METHOD.equals(dw.order.PaymentMgr.getPaymentMethod(paymentInstr.paymentMethod).ID)}">
    <isset name="klarnarequired" value="${true}" scope="page"/>
</isif>
</isloop>
<isif condition="${!empty(LineCntr)}">
    <isreportcheckout checkoutstep="${5}" checkoutname="${'OrderSummary'}"/>

```

### 3. Replace pdict.Basket with LineCntr at below places

```

<isif condition="${!pdict.CurrentForms.multishipping.entered.value}">
    <ischeckoutprogressindicator step="3" multishipping="false"
rendershipping="${LineCntr.productLineItems.size() == 0 ? 'false' : 'true'}"/>
    <else/>
        <ischeckoutprogressindicator step="4" multishipping="true"
rendershipping="${LineCntr.productLineItems.size() == 0 ? 'false' : 'true'}"/>
    </isif>

```

### 4. Add condition for secure acceptance error by replacing place order error with below code

```

<isif condition="${pdict.CurrentHttpParameterMap.SecureAcceptanceError != null &&
!empty(pdict.CurrentHttpParameterMap.SecureAcceptanceError.stringValue)}">
    <div class="error-form">${Resource.msg('confirm.error.technical','checkout',null)}</div>
    <elseif condition="${pdict.PlaceOrderError != null}">
        <div class="error-form">${Resource.msg(pdict.PlaceOrderError.code,'checkout',null)}</div>
    </isif>
</isif>

```

### 5. Replace pdict.Basket with LineCntr at below places

```

<iscomment>render each shipment</iscomment>
    <isset name="shipmentCount" value="${0}" scope="page"/>

    <isloop items="${LineCntr.shipments}" var="shipment" status="shipmentloopstate">
        <isif condition="${shipment.productLineItems.size() > 0 || shipment.giftCertificateLineItems.size() > 0}">
            <isset name="shipmentCount" value="${shipmentCount+1}" scope="page"/>
            <isif
condition="${LineCntr.shipments.size() > 1}">
                ....
                ... <existing code>...
                ....
<iscomment>RENDER COUPON/ORDER DISCOUNTS</iscomment>

```

```

<isloop
items="${LineCntr.couponLineItems}" var="couponLineItem" status="cliloopstate">
    ...
    .. <existing code>..
    ...
<td class="item-total">
    <isif
condition="${couponLineItem.applied}">
        <span class="coupon-
applied">${Resource.msg('summary.applied','checkout',null)}</span>
        <iselse/>
        <span class="coupon-not-
applied">${Resource.msg('summary.notapplied','checkout',null)}</span>
    </isif>
</td>
</tr>
</isif>
</isloop>

```

<isloop  
items="\${LineCntr.priceAdjustments}" var="priceAdjustment" status="cliloopstate">

6. Update with below section for Klarna/Secure acceptance Iframe and device fingerprint related changes

```

<div class="order-summary-footer">
    <div class="place-order-totals">
        <isordertotals p_lineitemctnr="${LineCntr}" p_showshipmentinfo="${false}"
p_shipmenteditable="${false}" p_totallabel="${Resource.msg('summary.ordertotal','checkout',null)}"/>
    </div>
    <isif condition="${!empty(klarnarequired) && klarnarequired}">
        <div id="klarna_container"></div>
        <div id="auth_button"></div>
        <input type="hidden" id="processorToken" name="processorToken"
value="${session.privacy.processorToken}"/>
    </isif>
    <isif condition="${!empty(pdict.Basket)}">
        <form action="${summaryaction}" method="post" class="submit-order"
name="submitOrder">
            <fieldset>
                <div class="form-row">
                    <a class="back-to-cart <isif condition="${!empty(klarnarequired)
&& klarnarequired}"> hide</isif> href="${URLUtils.url('Cart-Show')}">
                        <isprint
value="${Resource.msg('summary.editcart','checkout',null)}" encoding="off" />
                    </a>
                    <isif condition="${!empty(klarnarequired) && klarnarequired}">
                        <input type="hidden" id="klarnaAuthToken"
name="klarnaAuthToken"/>

```

```

        </isif>
        <button class="button-fancy-large <isif
condition="${!empty(klarnarequired) && klarnarequired}"> hide</isif> type="submit" name="submit"
value="${{Resource.msg('global.submitorder','locale',null)}}">
${{Resource.msg('global.submitorder','locale',null)}}
</button>
</div>
<input type="hidden" name="${dw.web.CSRFProtection.getAccessToken()}"
value="${dw.web.CSRFProtection.generateToken()}" />
</fieldset>
</form>
</isif>
</div>
<isif condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('CsDeviceFingerprintEnabled')}">
<isinclude url="${URLUtils.url('CYBCredit-IncludeDigitalFingerprint')}" />
</isif>
<isif condition="${isIFrame}">
<isinclude template="secureacceptance/secureAcceptanceframeSummary"/>
</isif>
<isif condition="${pdict.iscardinal}">
<isinclude template="cardinal/songbird"/>
</isif>
</isdecorate>

```

## Template - cart.isml

1. Add if condition to handle PlaceOrder error on cart page inside cart-banner

```

<isslot id="cart-banner" description="Banner for Cart page" context="global" />
<isif condition="${pdict.PlaceOrderError != null}">
<div class="error-form">${{Resource.msg(pdict.PlaceOrderError.code,'checkout',null)}}</div>
</isif>

```

2. Update below code to apply coupon on cart page inside <div class="cart-footer">

```

<iselseif condition="${pdict.CouponStatus != null && pdict.CouponStatus.error}">
<div class="error">
${{Resource.msgf("cart.APPLIED", "checkout", "",,
pdict.CurrentForms.cart.couponCode.htmlValue)}}
</div>
</iselseif>
</div>

```

## Resources – form.properties

Add year values above year.year.2022=2022

year.2037=2037
year.2036=2036
year.2035=2035
year.2034=2034
year.2033=2033

```

year.2032=2032
year.2031=2031
year.2030=2030
year.2029=2029
year.2028=2028
year.2027=2027
year.2026=2026
year.2025=2025
year.2024=2024
year.2023=2023
year.2022=2022

```

## Merchant Defined Data (MDD) Changes

In order to use Merchant defined data fields, merchant has to customize the below files to send merchant defined data in authorization request.

- CCAuthRequest() method of Cardfacade.ds file
- addCCAuthRequestInfo() method of libCyberSource.ds file

Merchant has to create and populate these objects and include in any of the authorization request. merchantDefinedData\_mddField\_1 to 100 request fields could be used to pass the information.

## Credit Card Auth

### CYBERSOURCE\_CREDIT.xml

This pipeline has been created for Credit Card/Secure Acceptance Silent Post/Visa Checkout authorization.

[Note: In order to use this pipeline, user should remove the existing CYBERSOURCE\_CREDIT.XML pipeline from Site genesis pipeline cartridge path to get the reference from Cybersource cartridge.]

### Form - creditcard.xml

1. Include the following form field after saveCard field in the form:

```

<!-- field for credit card subscription -->
<field formid="selectedCardID" type="string" />

```

2. Remove max-length="16" from credit card number field to allow cards numbers of varied length.

```

<field formid="number" label="creditcard.number" type="string" mandatory="true" masked="4" max-length="16"
description="creditcard.numberexample" binding="creditCardNumber" missing-error="creditcard.numbermissingerror"
value-error="creditcard.numbervalueerror"/>

```

## Template - creditcardjson.isml

Update code to mask ccNumber inside if condition, also retrieve subscription token of saved card to be used further:

```
<isscript>
    var ccNumber;
    if('maskedFourDigit' in pdict.SelectedCreditCard.custom &&
!empty(pdict.SelectedCreditCard.custom.maskedFourDigit)){
        ccNumber = pdict.SelectedCreditCard.custom.maskedFourDigit;
    } else {
        ccNumber = pdict.SelectedCreditCard.maskedCreditCardNumber;
    }
    var cc = {
        maskedNumber:ccNumber,
        holder:pdict.SelectedCreditCard.creditCardHolder,
        type:pdict.SelectedCreditCard.creditCardType,
        expirationMonth:pdict.SelectedCreditCard.creditCardExpirationMonth,
        expirationYear:pdict.SelectedCreditCard.creditCardExpirationYear,
        selectedCardID:pdict.SelectedCreditCard.UUID
    }
    var json = JSON.stringify(cc);
</isscript>
```

## Template - minicreditcard.isml

Add condition to map credit card number with four digit mask card number

```
<isscript>
    var ccType, ccNumber, ccMonth, ccYear, ccOwner;

    if (pdict.card) {
        ccType = pdict.card.creditCardType;
        if('maskedFourDigit' in pdict.card.custom && !empty(pdict.card.custom.maskedFourDigit)){
            ccNumber = pdict.card.custom.maskedFourDigit;
        } else {
            ccNumber = pdict.card.maskedCreditCardNumber;
        }

        ccMonth = pdict.card.creditCardExpirationMonth;
        ccYear = pdict.card.creditCardExpirationYear;
        ccOwner = pdict.card.creditCardHolder;
    }
</isscript>
```

## Script - Resource.ds

### Update ResourceHelper.getPreferences

```
COOKIE_HINT: (cookieHintAsset && cookieHintAsset.online) || false,
CHECK_TLS: Site.getCurrent().getCustomPreferenceValue('checkTLS'),
TOKENIZATION_ENABLED: (Site.getCurrent().getCustomPreferenceValue('CsTokenizationEnable') == 'YES')? true : false
```

## Tax Service

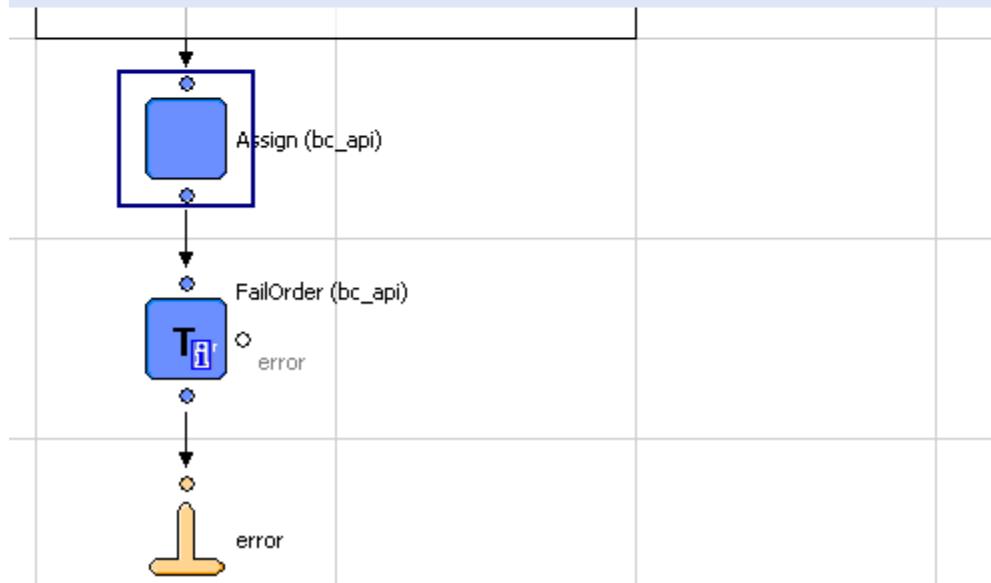
### Pipeline –COPlaceOrder.xml

#### Update Start Node

1. Add assign node before FailOrder pipelet where set variable

**CurrentSession.custom.SkipTaxCalculation as false and Basket as null**

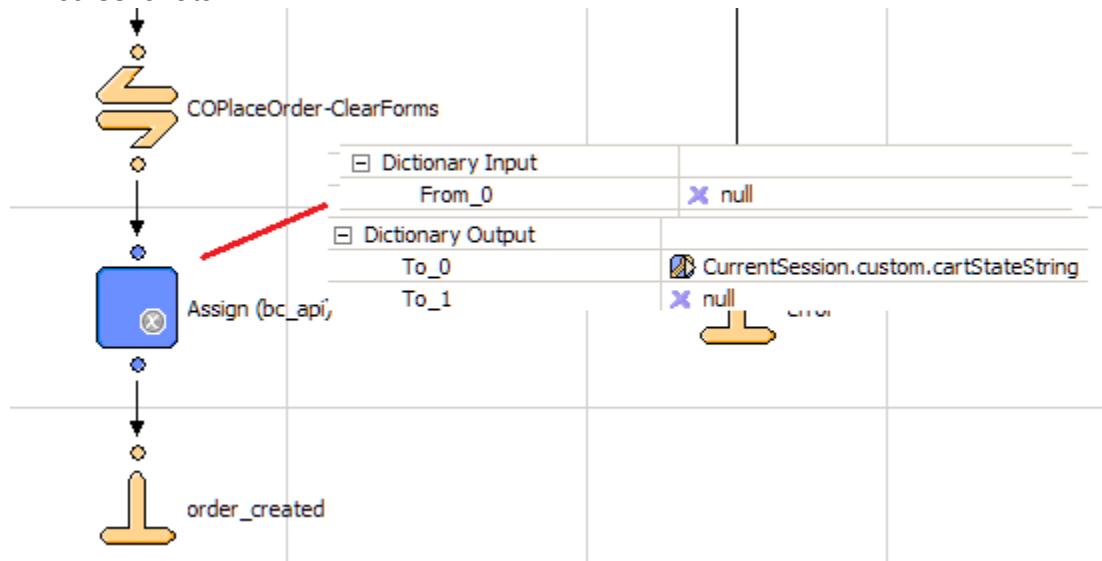
Property	Value
Configuration	
Transactional	<input checked="" type="radio"/> false
Dictionary Input	
From_0	<input type="checkbox"/> null
From_1	<input checked="" type="checkbox"/> false
From_2	<input type="checkbox"/> null
From_3	<input type="checkbox"/> null
From_4	<input type="checkbox"/> null
From_5	<input type="checkbox"/> null
From_6	<input type="checkbox"/> null
From_7	<input type="checkbox"/> null
From_8	<input type="checkbox"/> null
From_9	<input type="checkbox"/> null
Dictionary Output	
To_0	<input checked="" type="checkbox"/> Basket
To_1	<input checked="" type="checkbox"/> CurrentSession.custom.SkipTaxCalculation
To_2	<input type="checkbox"/> null
To_3	<input type="checkbox"/> null



2. Add a new assign node and set cartStateString parameter

**(CurrentSession.custom.cartStateString)** in current session to **null** after order has been placed, just before order\_created end node in the COPlaceOrder-Start pipeline. Refer to the following

screenshots:



## Pipeline – COBilling.xml

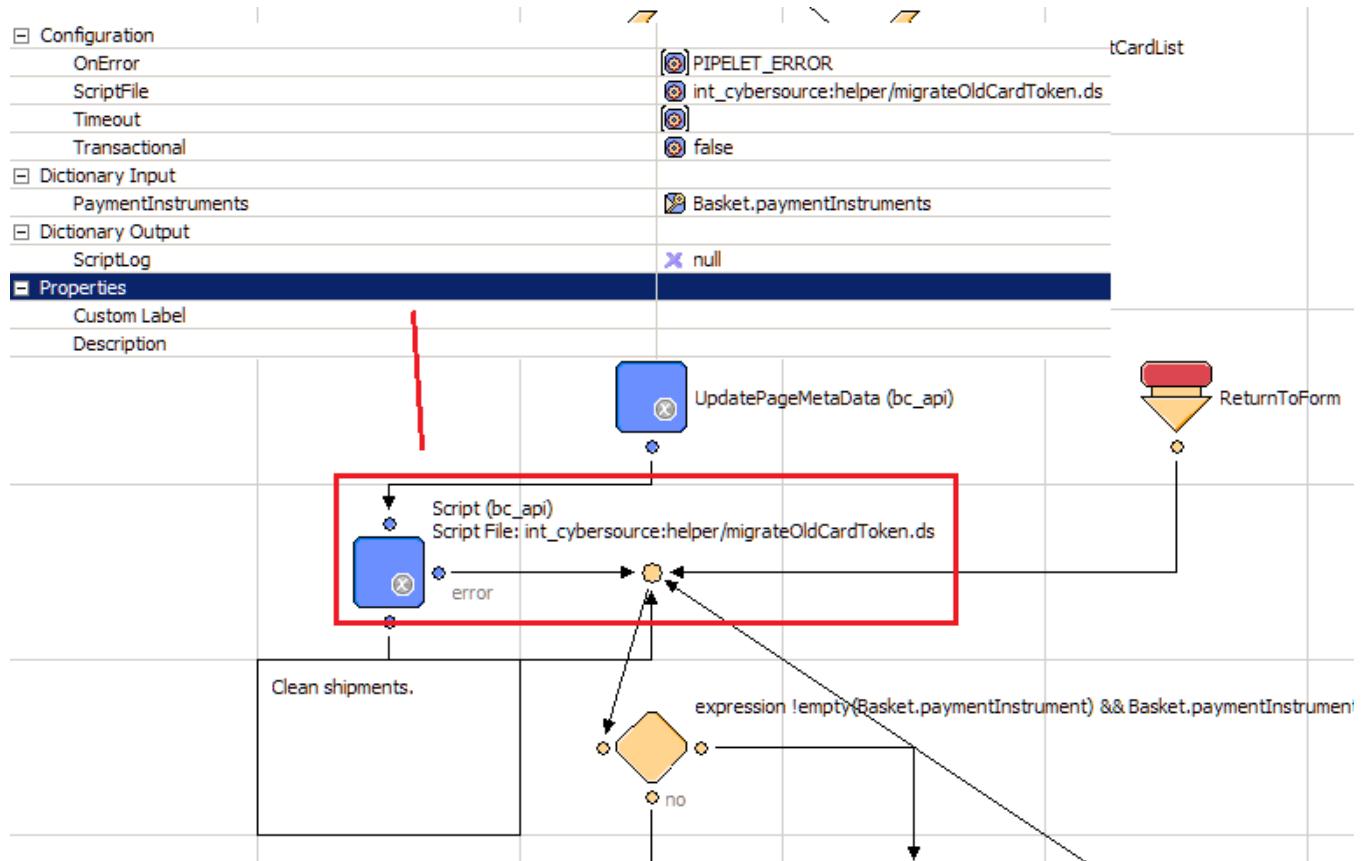
### Update Start node

**Note:** This change is required only when you are upgrading an older version of cybersource cartridge to the cartridge version greater than 17.1.

Add script pipelet just after updatePageMetaData pipelet for **ScriptFile**

**int\_cybersource:helper/migrateOldCardToken.ds** to set credit card number to credit card token when maskedFourDigit custom field is present in payment instrument:

Input field: **Basket.paymentInstruments**



## Pipeline – COShipping.xml

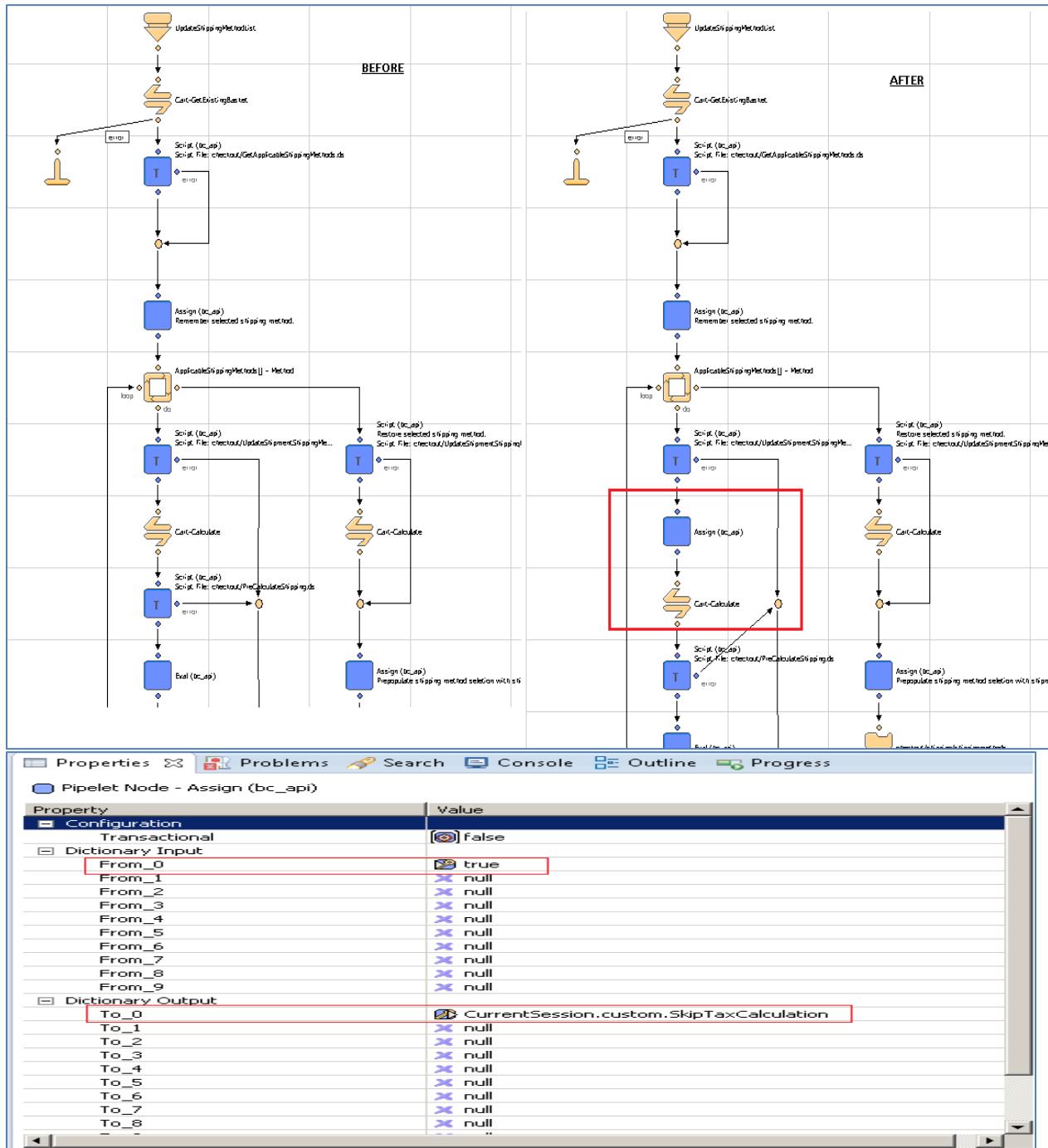
### Update UpdateShippingMethodList node

Add assign node before Cart-Calculate in the COShipping-UpdateShippingMethodList pipeline.

Refer to the following screenshot:

Input : true

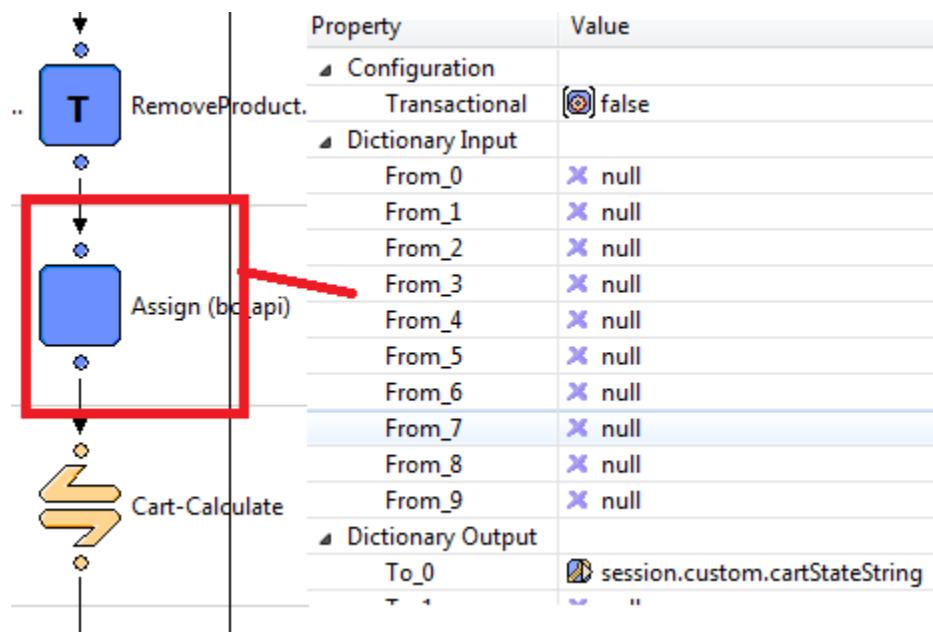
Output : CurrentSession.custom.SkipTaxCalculation



## Pipeline –Cart.xml

### Update deleteProduct transition flow in Show Node

- Add assign node with session.custom.cartStateString as null



## Address Verification Service

Provide Site Preference values for 2 AVS-related business rules:

User can change the site preference value by following Merchant Tools > Site Preferences > Custom Site Preferences > Cybersource path for a selected site as shown below.

CsAvsIgnoreResult – Determines whether AVS failures will force an auth failure.

Default value would be false and if user checks this checkbox then in case of address verification failure corresponding to AVS decline flags, order will be placed but considering the default value, in case of address verification failure corresponding to decline flags application will not allow user to place the order.

CsAvsDeclineFlags –Determines how “correct” an address must be to produce a failure result

Augment UI interaction nodes to deal with AVS failure or correction confirmation dialogs, wherever Payment Authorization takes place, typically within the COPlaceOrder-Start and COSummary-Submit.

Merchant can define the value of decline flags in the business manager Cybersource site preference and when address verification service is enabled and while placing the order if that service returns any of the flag mentioned in site preference, system will decline the order.

Screen shot to change the site preference value:

CyberSource Account Sign-Up number (BML):	5049900000000000	
CyberSource Merchant Promotion Code (BML):		
CyberSource Merchant ID (BML-Promo):	sapient_nitro	
CyberSource Merchant Password (BML-Promo):		
CyberSource Merchant Promotion Code (BML-Promo):		
CyberSource Ignore AVS Result (AVS):	<input type="checkbox"/>	false
CyberSource AVS Decline Flags (AVS):	A,B,C,E,G,I,K,N,O,R,S,1,2	
Cybersource - On Delivery Address Verification Failure:	DECLINE (DECLINE) (default) ▾	DECLINE (DECLINE)
	Prevent/enable authorization of payment if the DeliveryAddressVerification results in an error or rejection response.	
Cybersource - Enable Delivery Address Verification:	YES (YES) (default) ▾	YES (YES)
	This will enable Delivery Address Verification, to help minimize risk of undeliverable or returns orders, because of user data entry errors.	
CyberSource Merchant ID (PA):	sapient_nitro	
CyberSource Merchant Password (PA):	VNXK6X/pu/kmcK/E7gkBgHEVq3F6UCVLZFwr6daAC	
CyberSource Merchant Name (PA):	sapient_nitro	
CyberSource Purchase Order Acceptance City (Tax):		Lyndhurst
CyberSource Purchase Order Acceptance State Code (Tax):		NJ

## Delivery Address Validation Service

Provide Site Preference values for 2 DAV-related business rules:

User can change the site preference value by following Merchant Tools > Site

Preferences > Custom Site Preferences > Cybersource path for a selected site as shown below.

CsDavEnable – Determines whether DAV features are enabled for payment auth requests.

Default value would be DECLINE and if user selects APPROVE from dropdown then in case of shipping or delivery address validation failure corresponding to enable delivery address verification value mentioned below, order will be placed but considering the default value i.e. DECLINE, in case of shipping or delivery address validation failure corresponding to enable delivery address verification value, application will not allow user to place the order. This will Prevent/enable authorization of payment if the DeliveryAddressVerification results in an error or rejection response.

CsDavOnAddressVerificationFailure –Determines whether a DAV failure will result in a payment auth failure

Merchant can set the value of this field in the business manager Cybersource site preference. This will enable Delivery Address Verification, to help minimize risk of undeliverable or returns orders, because of user data entry errors. When user selects YES from the drop down and corresponding CsDavEnable site preference value is DECLINE and in case of delivery address verification failure, system will not allow process the order.

Augment UI interaction nodes to deal with AVS failure or correction confirmation dialogs, wherever Payment Authorization takes place, typically within the COPlaceOrder-Start and COSummary-Submit.

Screen shot to change the site preference value:

CyberSource Merchant Promotion Code (BML):	<input type="text"/>	
CyberSource Merchant ID (BML-Promo):	sapient_nitro	
CyberSource Merchant Password (BML-Promo):	<input type="password"/>	
CyberSource Merchant Promotion Code (BML-Promo):	<input type="text"/>	
CyberSource Ignore AVS Result (AVS):	<input checked="" type="checkbox"/>	false
CyberSource AVS Decline Flags (AVS):	A,B,C,E,G,I,K,N,O,R,S,1,2	
Cybersource - On Delivery Address Verification Failure:	DECLINE (DECLINE) (default) <input type="button" value="▼"/>	DECLINE (DECLINE)
Prevent/enable authorization of payment if the DeliveryAddressVerification results in an error or rejection response.		
Cybersource - Enable Delivery Address Verification:	YES (YES) (default) <input type="button" value="▼"/>	YES (YES)
This will enable Delivery Address Verification, to help minimize risk of undeliverable or returns orders, because of user data entry errors.		
CyberSource Merchant ID (PA):	sapient_nitro	
CyberSource Merchant Password (PA):	VNXK6X/pu/KmcK/E7gKBgHEVq3F6UCVLZFwr6daA0	
CyberSource Merchant Name (PA):	sapient_nitro	
CyberSource Purchase Order Acceptance City (Tax):	<input type="text"/>	Lyndhurst
CyberSource Purchase Order Acceptance State Code (Tax):	<input type="text"/>	NJ
CyberSource Purchase Order Acceptance Zip Code (Tax):	<input type="text"/>	76208
CyberSource Purchase Order Acceptance Country Code (Tax):	<input type="text"/>	US
CyberSource Purchase Order Origin City (Tax):	<input type="text"/>	Lyndhurst

## Payment Tokenization Service

### My Account - Template - paymentinstrumentdetails.isml

- Include the following code block just after the `<h1>` tag to display the Subscription Error Message message

```

<h1>${Resource.msg('account.paymentinstrumentlist.addcard', 'account', null)}</h1>
<isif condition="#{pdict.SubscriptionError != null}">
    <div class="error-form">
        ${Resource.msg('account.subscription', 'cybersource', null)}
    </div>
</isif>

```

- Include the below code right after `<isdynamicform>` form object to add Billing Address Fields

```

<isdynamicform formobject="#{pdict.CurrentForms.paymentinstruments.creditcards.newcreditcard.expiration}"
    formdata="#{currentCountry.dynamicForms.expirationInfo}" />

    <!-- code comments for adding new billing fields.-->
    <isinputfield
        formfield="#{pdict.CurrentForms.paymentinstruments.creditcards.address.firstname}" type="input"/>
        <isinputfield
            formfield="#{pdict.CurrentForms.paymentinstruments.creditcards.address.lastname}" type="input"/>
            <isinputfield
                formfield="#{pdict.CurrentForms.paymentinstruments.creditcards.address.address1}" type="input"/>
                <isinputfield
                    formfield="#{pdict.CurrentForms.paymentinstruments.creditcards.address.address2}" type="input"/>
                    <isinputfield
                        formfield="#{pdict.CurrentForms.paymentinstruments.creditcards.address.country}" type="select"/>
                        <isinputfield
                            formfield="#{pdict.CurrentForms.paymentinstruments.creditcards.address.states.state}" type="select"/>

```

```

        <isinputfield>
formfield="${pdict.CurrentForms.paymentinstruments.creditcards.address.city}" type="input"/>
        <isinputfield>
formfield="${pdict.CurrentForms.paymentinstruments.creditcards.address.postal}" type="input"/>
        <isinputfield>
formfield="${pdict.CurrentForms.paymentinstruments.creditcards.address.phone}" type="input"/>
        <isinputfield>
formfield="${pdict.CurrentForms.paymentinstruments.creditcards.address.email.emailAddress}" xhtmlclass="email"
type="input"/>
<!-- end code changes for billing fields. -->
```

## My Account - Template - paymentinstrumentlist.isml

1. Add below code just after `<h1>` tag to show delete subscription message

```

<h1>${Resource.msg('account.paymentinstrumentlist.header','account',null)}</h1>
<isif condition="${pdict.SubscriptionError != null}">
    <div class="error-form">
        ${Resource.msg('paymentinstrumentlist.deletesubscription','cybersource',null)}
    </div>
</isif>
```

## My Account - Pipeline – PaymentInstruments.xml

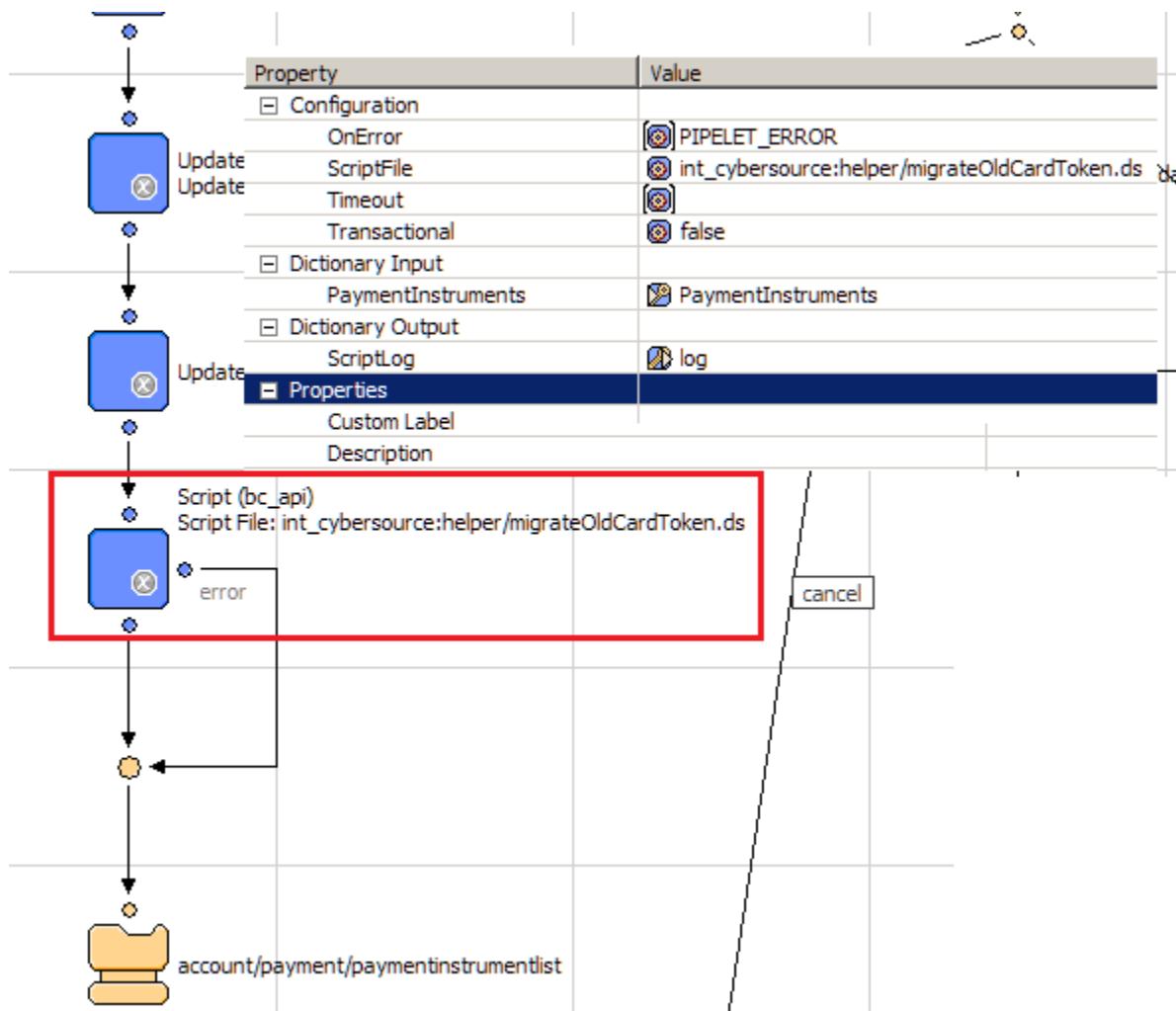
### Update “List” node

**Note:** This change is required only when you are upgrading an older version of cybersource cartridge to the cartridge version greater than 17.1.

Add script pipelet just after updatePageMetaData pipelet for **ScriptFile**

int\_cybersource:helper/migrateOldCardToken.ds to set credit card number to credit card token when maskedFourDigit custom field is present in payment instrument:

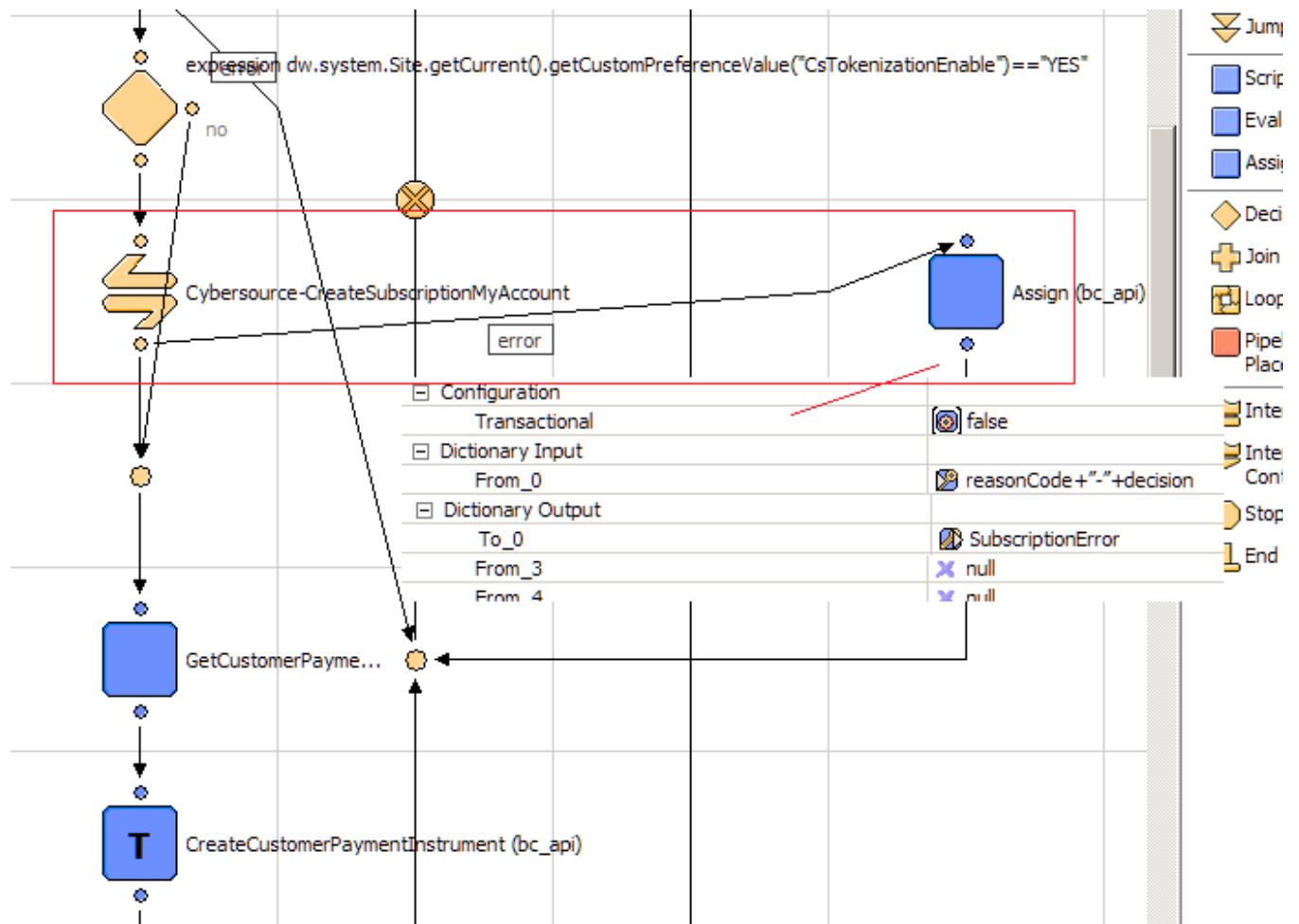
Input field: **PaymentInstruments**

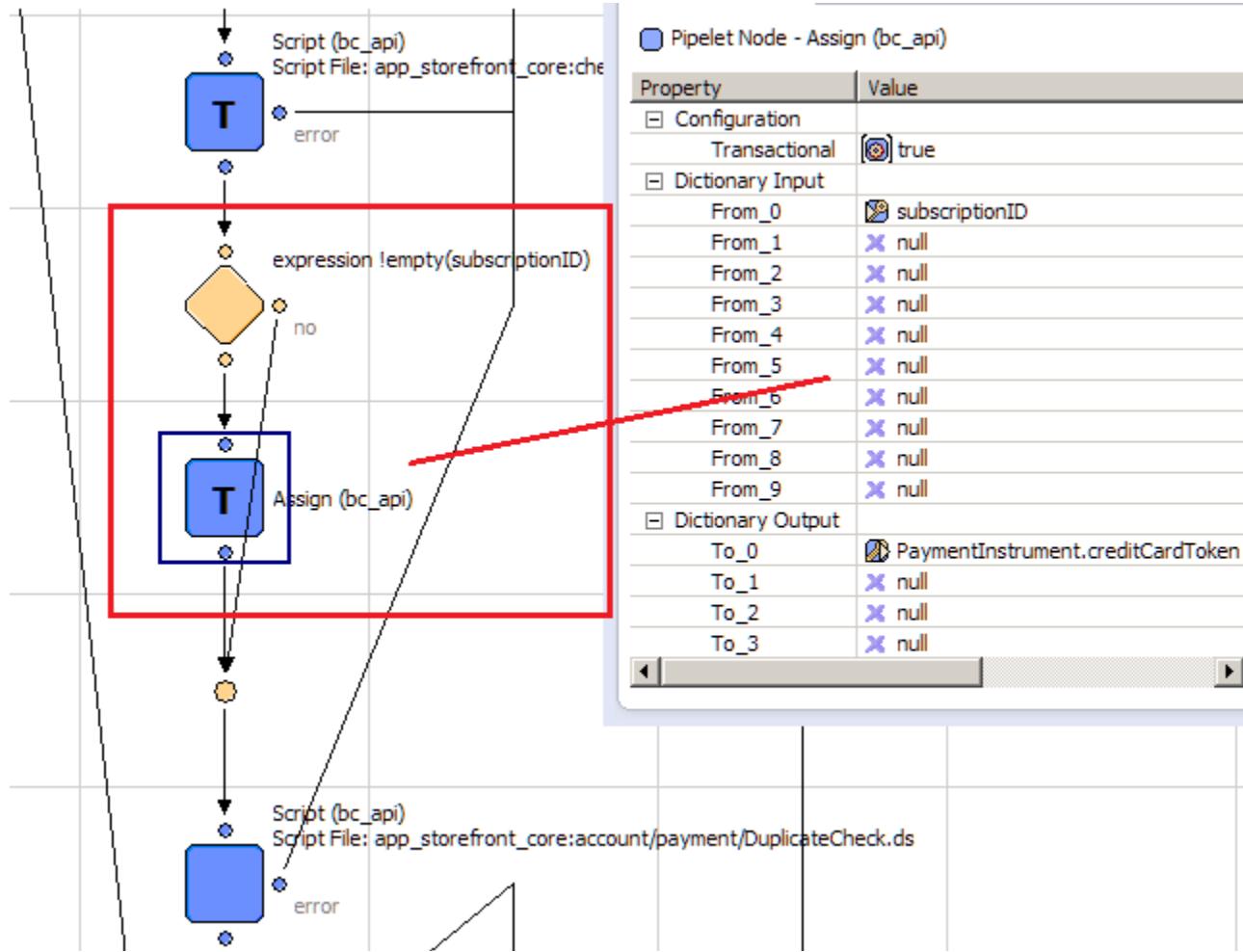


#### Update “Add” node

1. Add a Decision node as  
`dw.system.Site.getCurrent().getCustomPreferenceValue("CsTokenizationEnable")=="YES"`  
 just after PaymentInstruments-VerifyCreditCard to check whether tokenization is enabled from BM
  - a. If tokenization is enabled , a call to Cybersource -CreateSubscriptionMyAccount will be made for subscription creation
  - b. If not, continue with the next step without Subscription creation
2. Add and assign node to trace the error in “SubscriptionError” in case of failure for Subscription Creation with value as **reasonCode+-+decision**
3. Add decision node as **!empty(subscriptionID)** just after SaveCustomerCreditCard.ds and for existing Subscription ID
  - a. In Case Subscription Id is not empty , Add Transactional assign node and set the value of “subscriptionID” into “PaymentInstrument.creditCardToken”

[Note]: Please refer below screen shot for all steps mentioned above





2. Further update the existing script pipelet of  
app\_storefront\_core:account/payment/DuplicateCheck.ds with below I/O parameters:

**Input:**

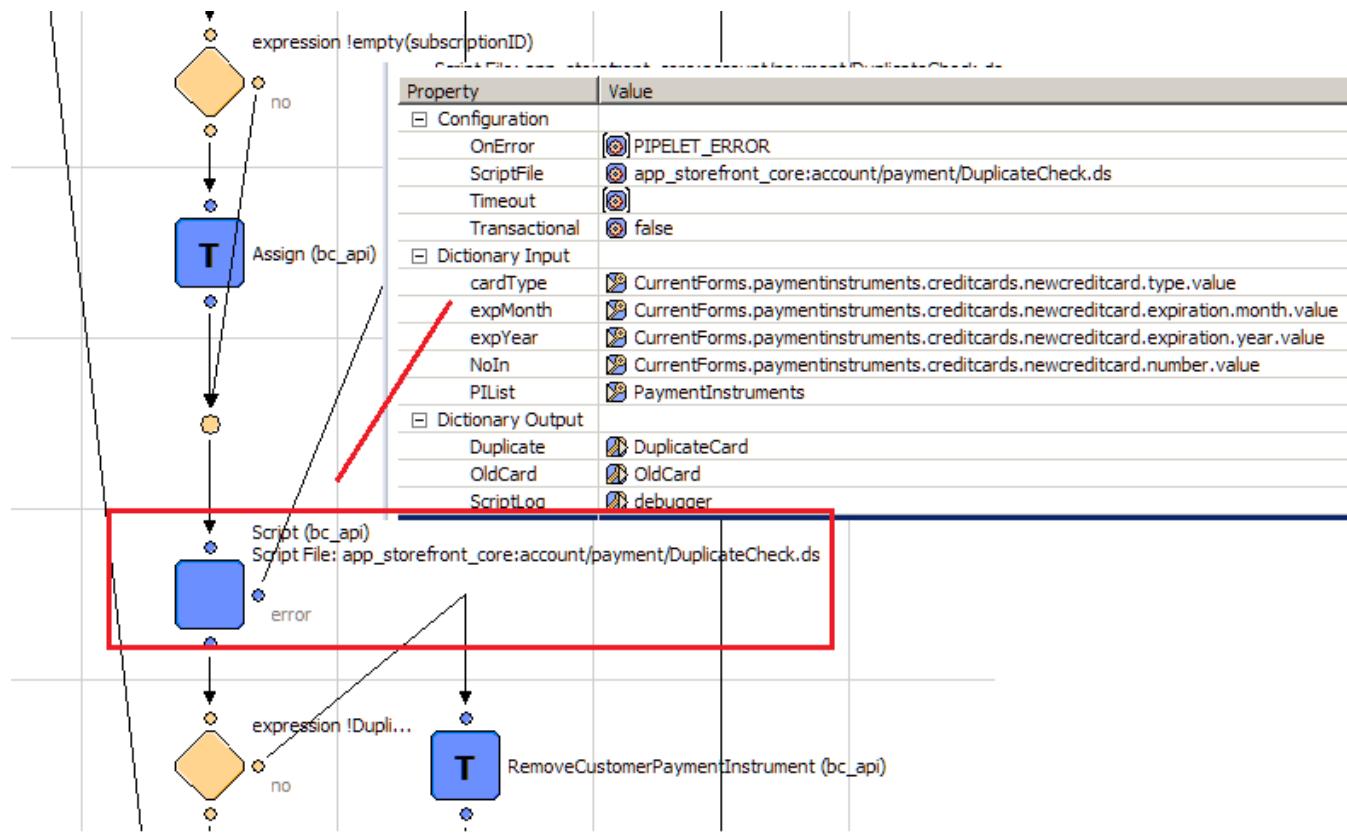
cardType	CurrentForms.paymentinstruments.creditcards.newcreditcard.type.value
expMonth	CurrentForms.paymentinstruments.creditcards.newcreditcard.expiration.month.value
expYear	CurrentForms.paymentinstruments.creditcards.newcreditcard.expiration.year.value
NoIn	CurrentForms.paymentinstruments.creditcards.newcreditcard.number.value
PIList	PaymentInstruments

**Output:**

Duplicate	DuplicateCard
OldCard	OldCard

Continue with the existing flow further.

Refer below:

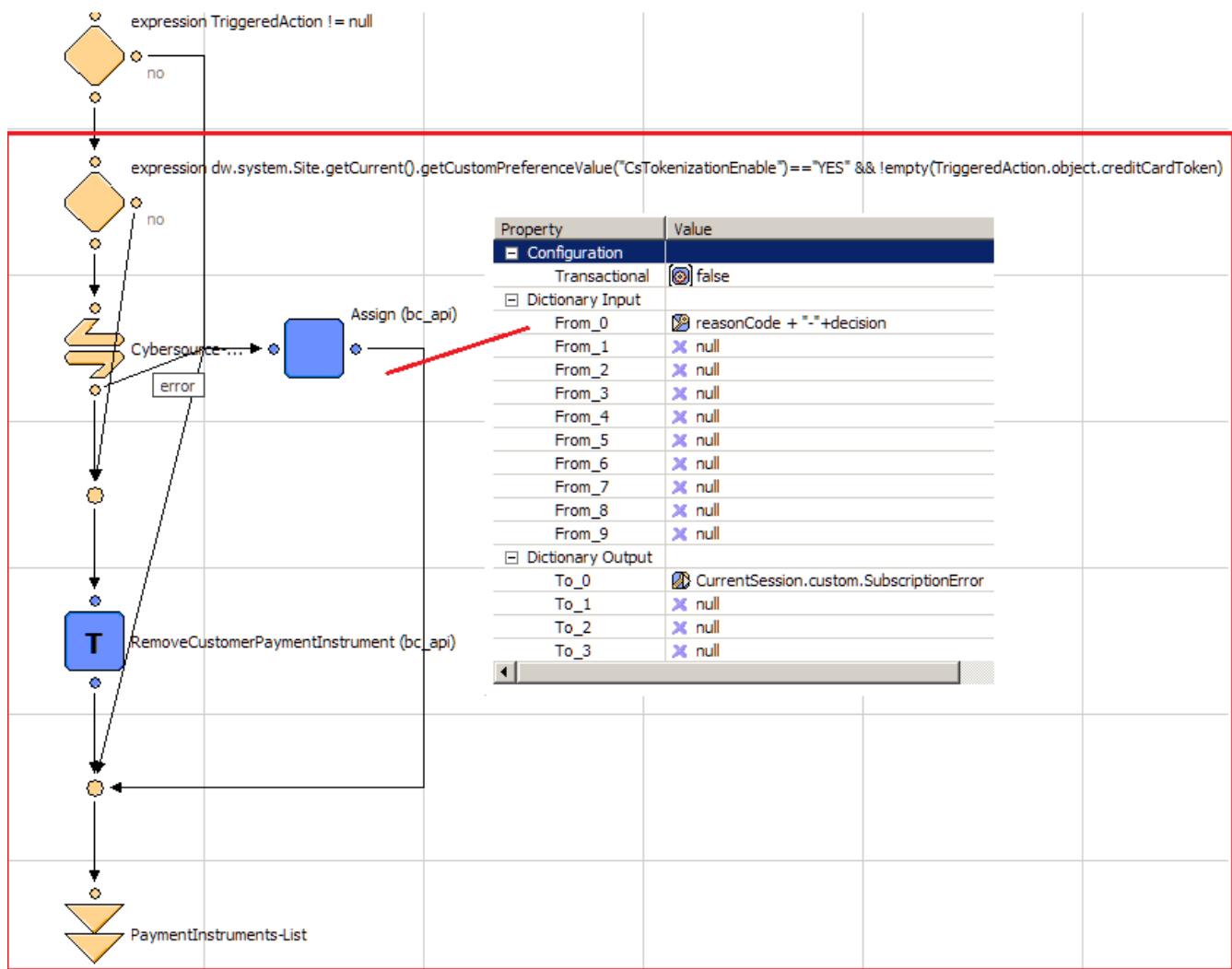


#### Update "Delete" node

1. Add a Decision node as
 

```
dw.system.Site.getCurrent().getCustomPreferenceValue("CsTokenizationEnable").value.equals("YES") && !empty(TriggeredAction.object.creditCardToken)
```

 just after TriggeredAction to check whether tokenization is enabled from BM
2. Call Cybersource-DeleteSubscriptionAccount
3. On Error Add and assign node and set the input as `reasonCode + "-" + decision` and set the corresponding output as `CurrentSession.custom.SubscriptionError`
4. Join to PaymentInstruments-List on error



- All functionalities related to Cybersource Payment Tokenization are created and working in stand-alone mode in **CYBServicesTesting.xml** pipeline. They have to customized and integrated as per the merchant specific needs

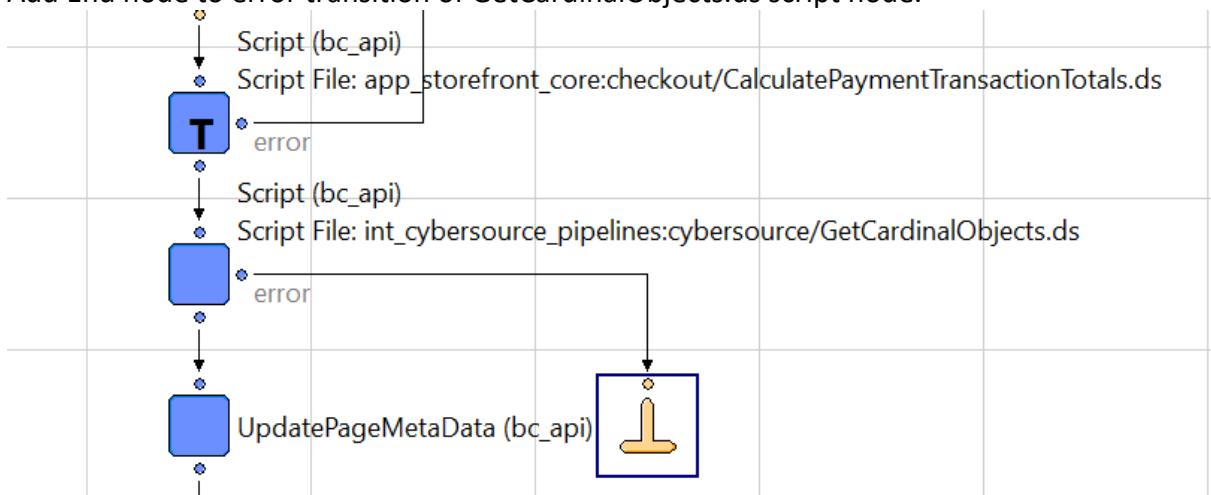
# Payer Authentication

## Pipeline - COSummary.xml

### Update Start Node

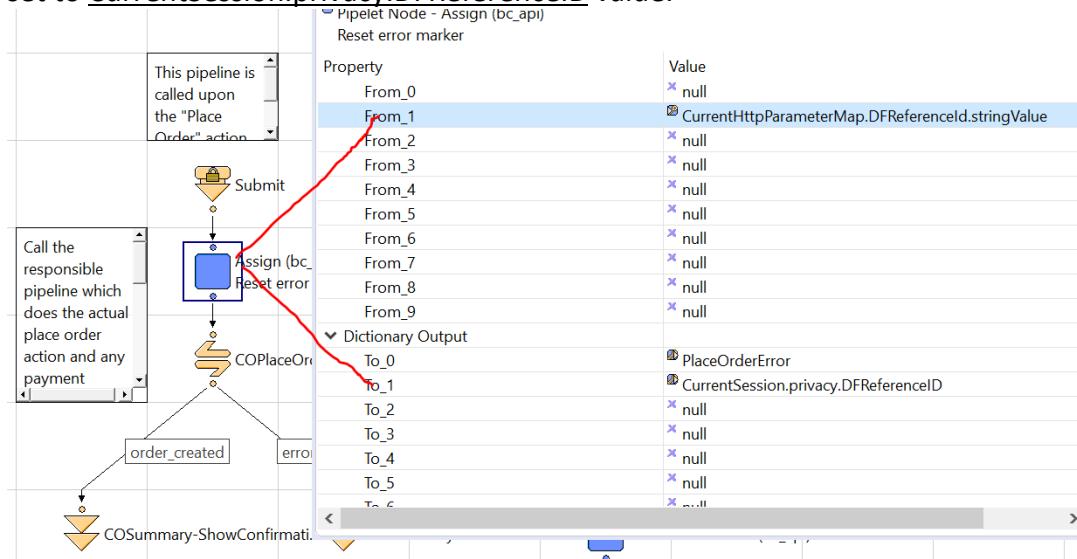
Add new script node between CalculatePaymentTransactionTotals.ds Node and UpdatePageMetaData(bc\_api) which includes GetCardinalObjects.ds script file which loads jwt token and order object into pipeline dictionary from int\_cybersource\_pipelines cartridge.

Add End node to error transition of GetCardinalObjects.ds script node.



### Update Submit Node

Update assign node after Submit node where CurrentHttpParameterMap.DFReferenceID.stringValue is set to CurrentSession.privacy.DFReferenceID value.

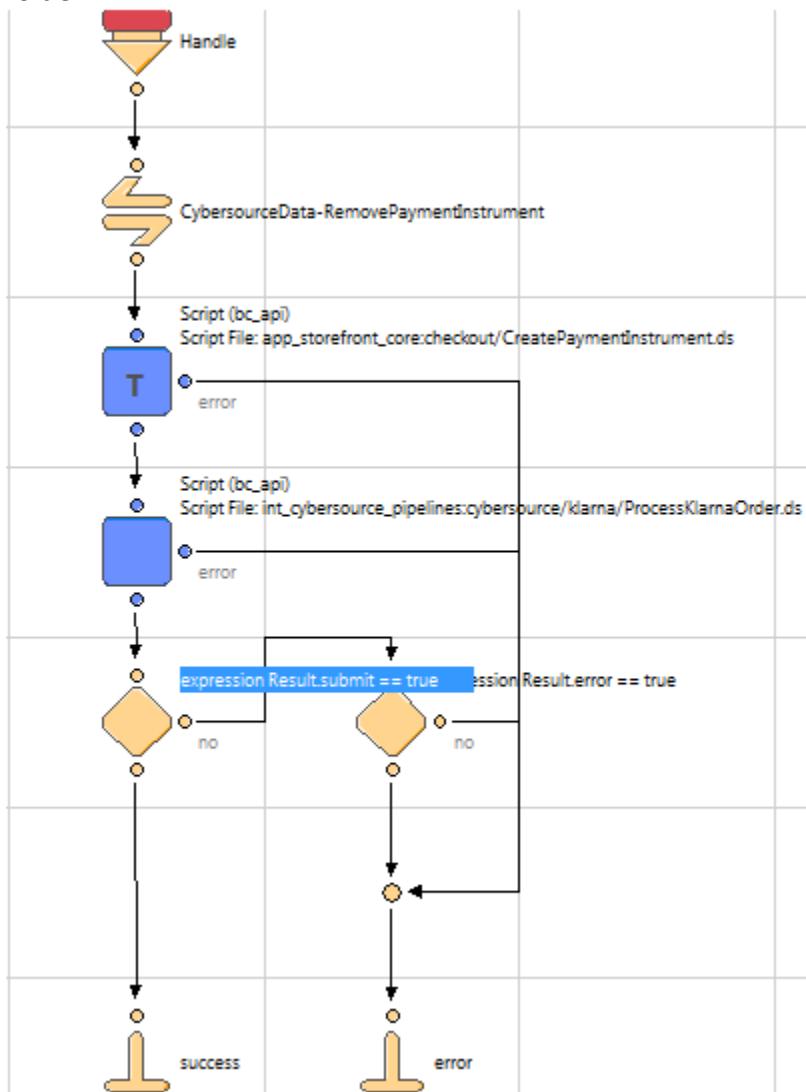


## Klarna

### KLARNA\_CREDIT.xml

This pipeline has been created to call session service and authorize the Klarna amount.

KLARNA\_CREDIT-Handle start node will create payment instrument for Klarna, process session request and return the response back. This file would be part of <SG pipelines>\cartridge\pipelines folder.



ProcessKlarnaOrder.ds has been used to process the Klarna session request. Sceen cap for Input to the script has been attached below.

Screenshot of the Pipeline Editor interface showing the properties of a Pipelet Node - Script (bc\_api) node.

**Properties:**

- Script File: int\_cybersource\_pipelines:cybersource/klarna/ProcessKlarnaOrder.ds
- OnError: PIPELET\_ERROR
- ScriptFile: int\_cybersource\_pipelines:cybersource/klarna/ProcessKlarnaOrder.ds
- Timeout: 0
- Transactional: false
- Dictionary Input:**
  - Basket: Basket
  - CurrentHttpParameterMap: null
  - Order: null
  - paymentFlow: "session"
  - PaymentInstrument: PaymentInstrument
- Dictionary Output:**
  - Result: Result
  - ScriptLog: log
- Properties:**
  - Custom Label

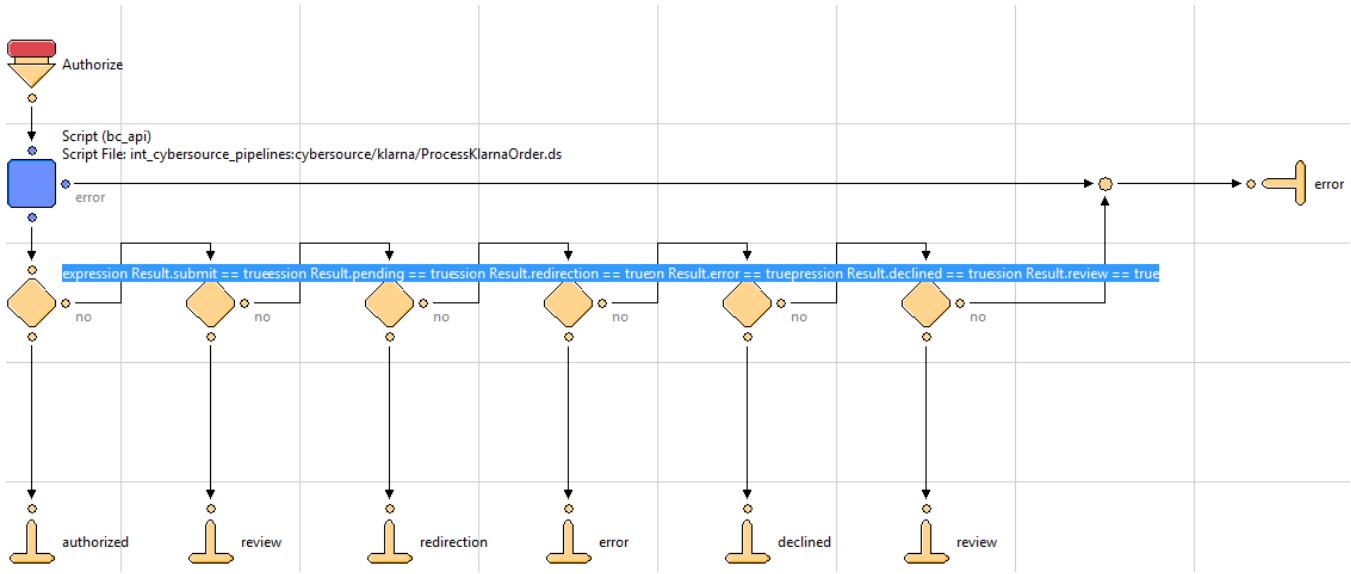
**Diagram:**

```

graph TD
    Start(( )) --> Success{ }
    Start --> Error{ }
    Success --> SuccessEnd(( ))
    Error --> ErrorEnd(( ))
    SuccessEnd --> End(( ))
    ErrorEnd --> End
  
```

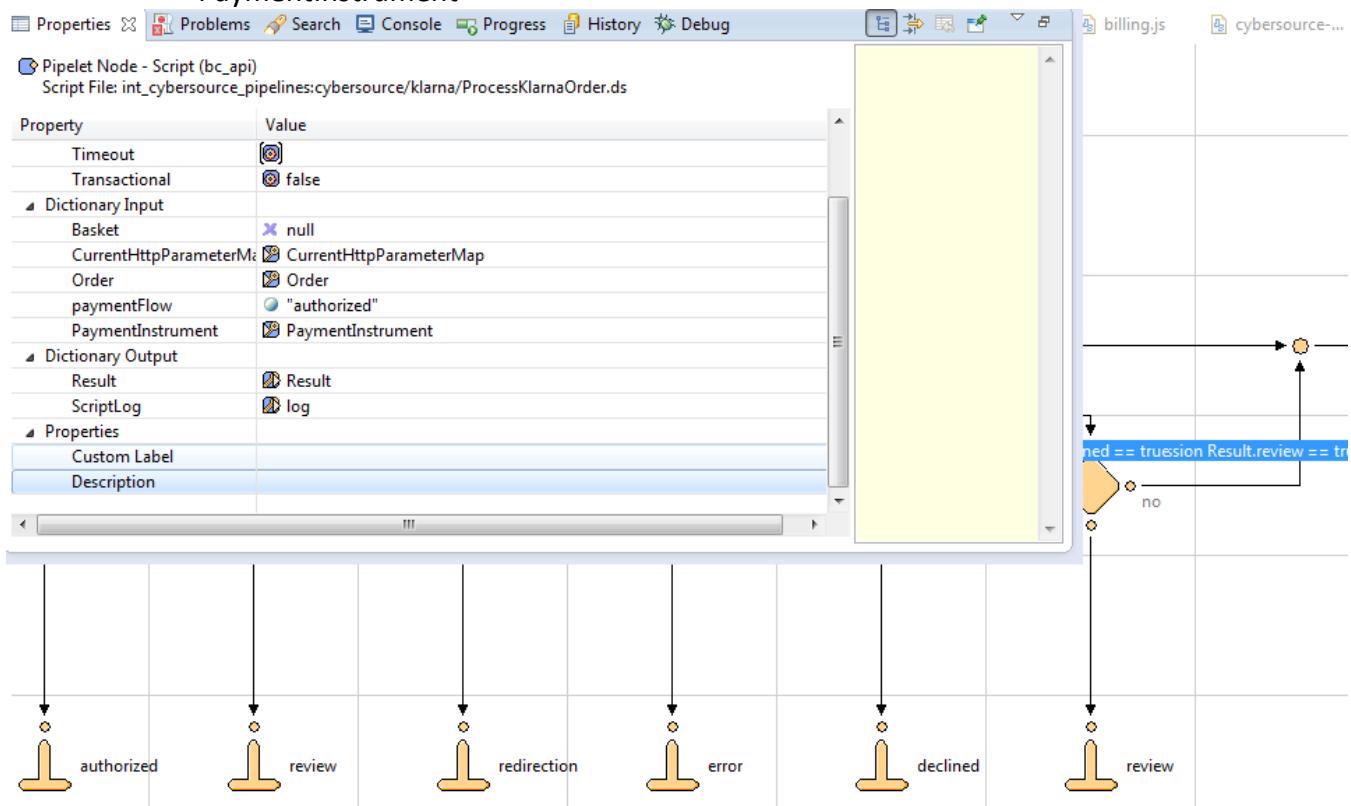
KLARNA\_CREDIT-Authorize pipeline node will process the Klarna authorization request and handle the response if merchant URL redirection has not been enabled. Below cases have been handled in decision nodes.

- Result.submit == true
- Result.pending == true
- Result.redirection == true
- Result.error == true
- Result.declined == true
- Result.review == true



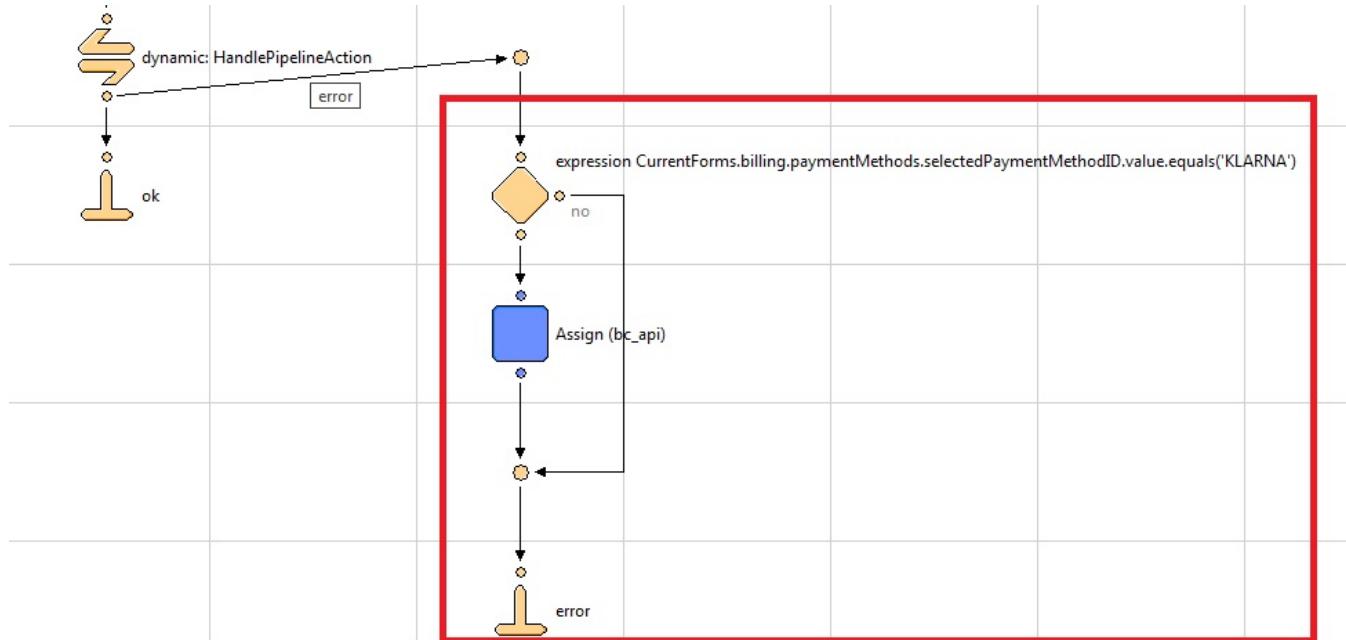
ProcessKlarnaOrder.ds has been used to process the request. Screen cap for the input to script has been attached below. Input to the script has mentioned below

- CurrentHttpParameterMap
- Order
- "authorized"
- PaymentInstrument



**COBilling.xml**

- Changes have been made in this pipeline for node COBilling-HandlePaymentSelection to handle the Klarna error case for session service



Condition in the expression node is

"CurrentForms.billing.paymentMethods.selectedPaymentMethodID.value.equals('KLARNA')"

Properties	
Pipelet Node - Assign (bc_api)	
property	Value
# Configuration	<input checked="" type="checkbox"/> false
Transactional	<input checked="" type="checkbox"/> new dw.system.Status(dw.system.Status.ERROR, "co...")
# Dictionary Input	<input checked="" type="checkbox"/> null
From_0	<input checked="" type="checkbox"/> null
From_1	<input checked="" type="checkbox"/> null
From_2	<input checked="" type="checkbox"/> null
From_3	<input checked="" type="checkbox"/> null
From_4	<input checked="" type="checkbox"/> null
From_5	<input checked="" type="checkbox"/> null
From_6	<input checked="" type="checkbox"/> null
From_7	<input checked="" type="checkbox"/> null
From_8	<input checked="" type="checkbox"/> null
From_9	<input checked="" type="checkbox"/> null
# Dictionary Output	<input checked="" type="checkbox"/> KlarnaSessionError
To_0	<input checked="" type="checkbox"/> KlarnaSessionError
To_1	<input checked="" type="checkbox"/> null

Assign node input is "new dw.system.Status(dw.system.Status.ERROR, "confirm.error.declined")" and output is "KlarnaSessionError".

### **billing.isml**

- Add a condition to handle error returned by session service

```
<iscomment>
    This template visualizes the billing step of both checkout scenarios.
    It provides selecting a payment method, entering gift certificates and
    specifying a separate billing address.
    Depending on the checkout scenario (single or multi shipping) it is
    either the second or third checkout step.
</iscomment>
<isif condition="${!empty(pdct.KlarnaSessionError)}">
    <div class="error-form">${Resource.msg(pdct.KlarnaSessionError.code,'checkout',null)}</div>
</isif>
<iscomment>Report this checkout step</iscomment>
<isreportcheckout checkoutstep="4" checkoutname="${'Billing'}"/>
```

### **htmlhead.isml**

- Add a place holder to load Klarna JS

```
Line 9 - Line 20
<iscomment>See https://github.com/h5bp/html5-boilerplate/blob/5.2.0/dist/doc/html.md#x-ua-compatible</iscomment>
<meta http-equiv="x-ua-compatible" content="ie=edge">

<iscomment>See https://github.com/h5bp/html5-boilerplate/blob/5.2.0/dist/doc/html.md#mobile-viewport</iscomment>
<meta name="viewport" content="width=device-width, initial-scale=1">
<isscript>
    var CybersourceConstants = require('int_cybersource/cartridge/scripts/utils/CybersourceConstants');
</isscript>
<script type="text/javascript">
WebFontConfig = {
  google: { families: [ 'Lato:100,300,700,100italic,300italic:latin', 'Crete+Round:400,400italic:latin' ] }
};
(function() {
```

### **Line 78 – Line 83**

```
<iscomment>Visa Checkout clickjacking prevention</iscomment>
<isinclude template="visacheckout/clickjackingPrevent.isml" />
<isif condition="${'klarnaJSAPIPath' in dw.system.Site.current.preferences.custom &&
!empty(dw.system.Site.current.preferences.custom.klarnaJSAPIPath)
    &&
dw.order.PaymentMgr.getPaymentMethod(CybersourceConstants.KLARNA_PAYMENT_METHOD).isActive()}">
    <script src="${dw.system.Site.current.preferences.custom.klarnaJSAPIPath}" async></script>
</isif>
```

**summary.isml**

- Changes have been made in this file to load Klarna widget on summary page and other conditions to display Place Order and Edit button for other payment methods except Klarna.

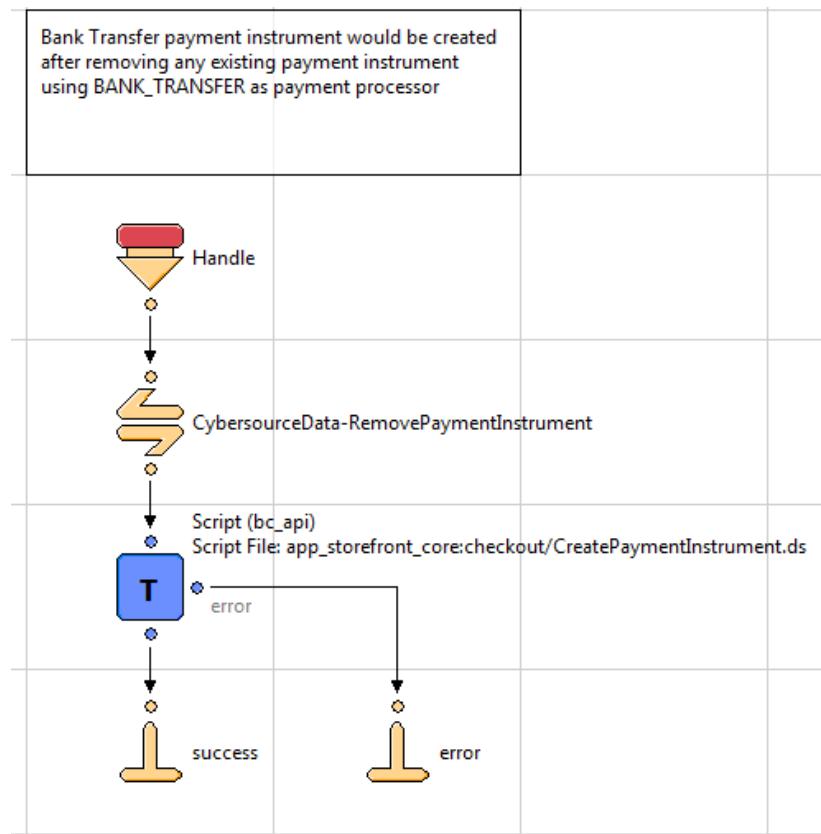
**Please refer to the changes mentioned under custom code – generic section- > summary.isml**

## Bank Transfer

**BANK\_TRANSFER.xml**

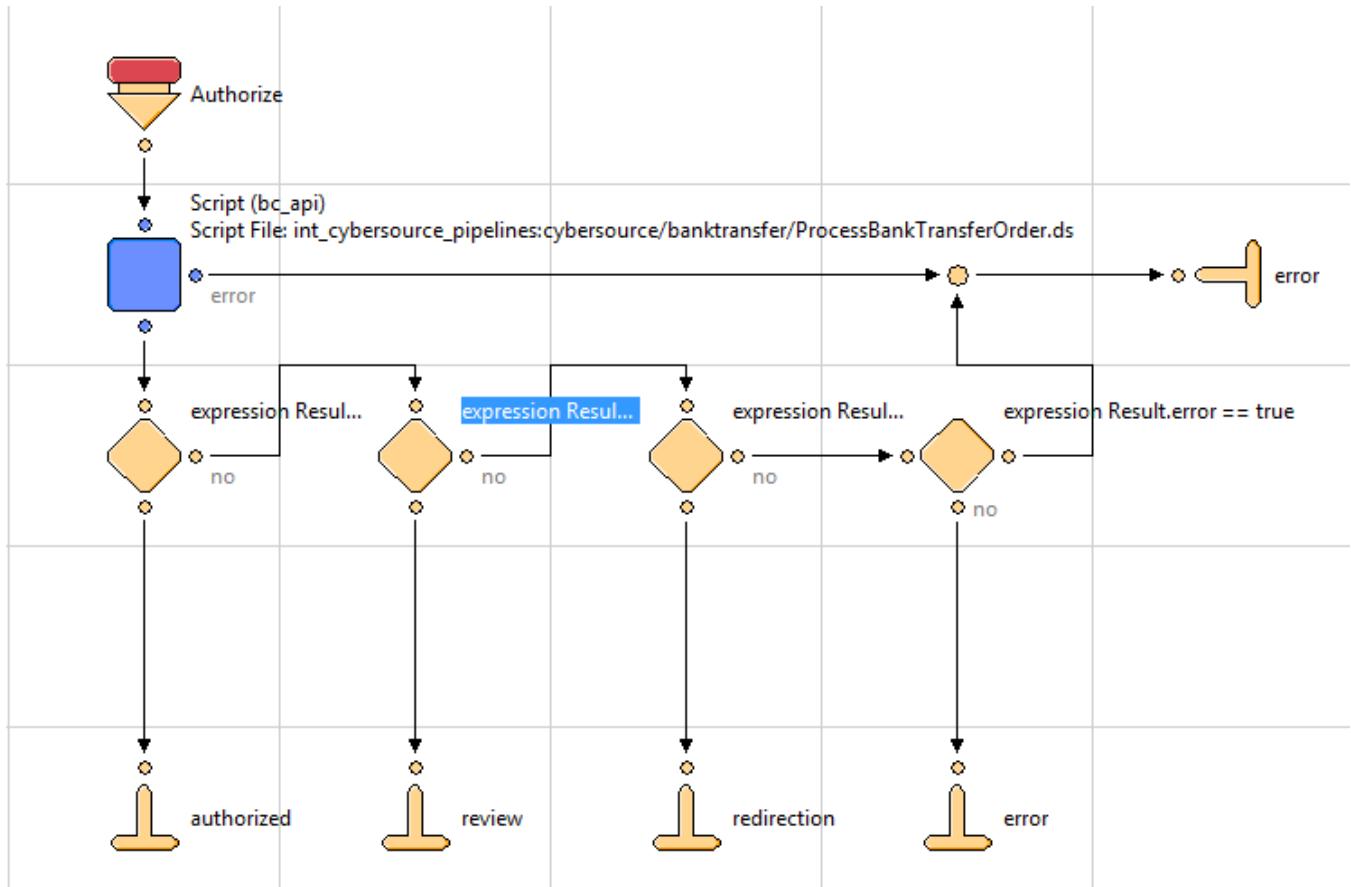
This pipeline has been created to call sale service to authorize the bank transfer APM amount.

KLARNA\_CREDIT-Handle start node will create payment instrument for Bank Transfer APM. This file would be part of <SG pipelines>\cartridge\pipelines folder.



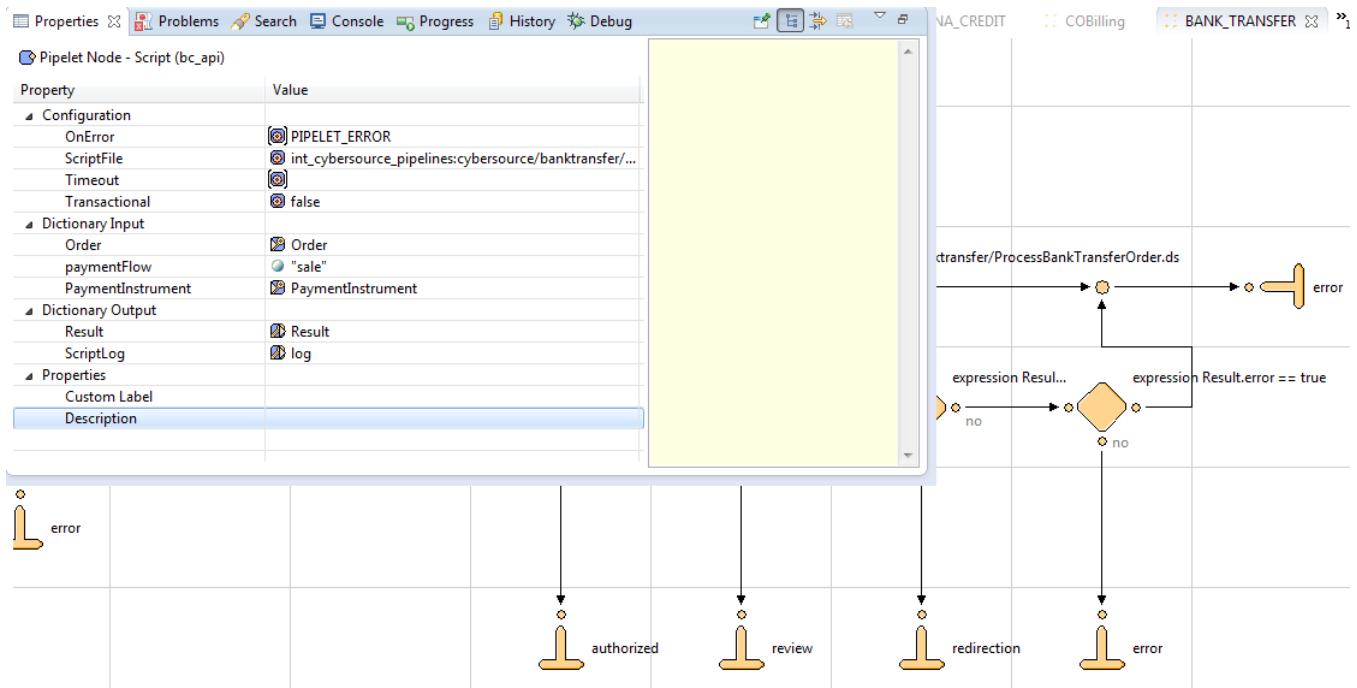
BANK\_TRANSFER-Authorize pipeline node will process the Bank Transfer authorization request and handle the response back. Below cases have been handled in decision nodes.

- Result.authorized == true
- Result.pending == true
- Result.redirection == true
- Result.error == true



`ProcessBankTransferOrder.ds` has been used to process the request. Screen cap for the input to script has been attached below. Input to the script has mentioned below

- Order
- "sale"
- PaymentInstrument



## billing.xml

- Add form fields for BIC and Bank List

```
<group formid="paymentMethods">

    <!--
        the selected payment method, e.g. "CREDIT_CARD" or "PayPal", this field is
        used to transport the payment method selection; validations then can be
        made on the proper form group which defines the actual payment method attributes
    -->

    <field formid="bankListSelection" label="payment.bankselection" type="string" mandatory="false"
           missing-error="payment.bankselectionerror" value-
           error="payment.bankselectionerror" />

    <field formid="bicNumber" label="payment.bicnumber" type="string" mandatory="false"
           missing-error="payment.bicnumbererror" value-error="payment.bicnumbererror" />

    <field formid="selectedPaymentMethodID" type="string" default-value="CREDIT_CARD">
        <options optionid-binding="ID" value-binding="ID" label-binding="name"/>
    </field>

    <!-- list of available credit cards to select from -->
    <list formid="creditCardList">

        <!-- action for actually selecting the credit card -->
        <action formid="useThisCreditCard" valid-form="false"/>

    </list>
</group>
```

```

<!-- fields for CreditCard selection -->
<include formid="creditCard" name="creditcard"/>

<!-- fields for BML selection -->
<include formid="bml" name="bml"/>

</group>

```

**paymentmethods.isml**

- Add condition to handle bank transfer payment method on billing page present at checkout\billing\ path  
Changes are already covered under custom code > generic section-> paymentmethods.isml

**forms.properties**

- Add resource bundle value

payment.bankselection=Select Bank  
 payment.bankselectionerorr=Please Select Bank  
payment.bicnumber=BIC Number  
 payment.bicnumbererror=Please Enter BIC number

## Alipay Authorization

**ValidatePaymentInstruments.ds**

Replace the GIFT\_CERTIFICATE payment instrument check

```

Add import
importPackage(dw.web);

// ignore gift certificate payment instruments
if(PaymentInstrument.METHOD_GIFT_CERTIFICATE.equals(pi.paymentMethod) ||
Resource.msg("paymentmethodname.alipay", "cybersource", null).equals(pi.paymentMethod))
{

```

## PayPal Express & PayPal Billing Agreement

**footer\_ui.isml**

Place below lines of code in footer\_ui.isml at end of file

```

<isscript>
  var CybersourceConstants = require('int_cybersource/cartridge/scripts/utils/CybersourceConstants');
</isscript>
<isif condition="${dw.order.PaymentMgr.getPaymentMethod(CybersourceConstants.METHOD_PAYPAL).isActive() &&
dw.system.Site.current.getCustomPreferenceValue('CsEnableExpressPaypal') == true}">
  <script src="https://www.paypalobjects.com/api/checkout.js"></script>
</isif>

```

```
<script src="${URLUtils.staticURL('/js/cybersource-custom.js')}"></script>
```

## Minicart.isml

Include script module after util/module

```
<isinclude template="util/modules"/>
<isscript>
    var CybersourceConstants = require('int_cybersource/cartridge/scripts/utils/CybersourceConstants');
</isscript>
```

Add below code after class="button mini-cart-link-cart" anchor tag

```
<a class="button mini-cart-link-cart" href="${URLUtils.https('Cart-Show')}"
title="${Resource.msg('minicart.viewcart.label','checkout',null)}">${Resource.msg('minicart.viewcart','checkout',null)}</a>

<form class="minicart-action-expresscheckout" action="${URLUtils.https('CYBPaypal-
SessionCallback')}" method="post" name="${pdict.CurrentForms.cart.dynamicHtmlName}" id="checkout-form">
    <fieldset>
        <isif condition=" ${dw.order.PaymentMgr.getPaymentMethod(CybersourceConstants.METHOD_PAYPAL).isActive()} && ${dw.system.Site.current.getCustomPreferenceValue('CsEnableExpressPaypal')}==true">
            <isif condition=" ${dw.system.Site.getCurrent().getCustomPreferenceValue('payPalBillingAgreements')} && !empty(pdict.CurrentCustomer.profile) && !empty(pdict.CurrentCustomer.profile.custom.billingAgreementID)">
                <input type="image" src="https://www.paypal.com/en_US/i/btn/btn_xpressCheckout.gif" alt="Paypal Express" />
            <iselse>
                <div class="paypal-button-container-mini"></div>
            </iselse>
        </isif>
    </fieldset>
</form>
```

## Cart.isml

Add cubersource constants after API include section

```
<isinclude template="util/reporting/ReportBasket.isml" />
<isscript>
    var CybersourceConstants = require('int_cybersource/cartridge/scripts/utils/CybersourceConstants');
</isscript>
```

Add below lines of inside <div class="cart-actions> and <div class="cart-actions cart-actions-top">

```
<div class="cart-actions cart-actions-top">
    <iscomment>continue shop url is a non-secure but checkout needs a secure and that is why
separate forms!</iscomment>
    <form class="cart-action-checkout" action="${URLUtils.continueURL()}" method="post"
name="${pdict.CurrentForms.cart.dynamicHtmlName}" id="checkout-form">
```

```

<fieldset>
    <isif condition="${enableCheckout}">
        <button class="button-fancy-large" type="submit"
value="${Resource.msg('global.checkout','locale',null)}" name="${pdict.CurrentForms.cart.checkoutCart.htmlName}">
            ${Resource.msg('global.checkout','locale',null)}
        </button>

        <isif
condition="${dw.order.PaymentMgr.getPaymentMethod(CybersourceConstants.METHOD_PAYPAL).isActive() &&
dw.system.Site.current.getCustomPreferenceValue('CsEnableExpressPaypal') == true}">
            <isif
condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('paypalBillingAgreements') &&
!empty(pdict.CurrentCustomer.profile) && !empty(pdict.CurrentCustomer.profile.custom.billingAgreementID)}">
                <input type="image"
src="https://www.paypal.com/en_US/i/btn/btn_xpressCheckout.gif" alt="Paypal Express"
class="billingAgreementExpressCheckout"/>
            <iselse>
                <div class="paypal-button-container-
cart2"></div>
            </iselse>
        </isif>
    </isif>

```

```

<div class="cart-actions">

    <iscomment>continue shop url is a non-secure but checkout needs a secure and that is why
separate forms!</iscomment>
    <form class="cart-action-checkout" action="${URLUtils.continueURL()}" method="post"
name="${pdict.CurrentForms.cart.dynamicHtmlName}" id="checkout-form">
        <fieldset>
            <isif condition="${enableCheckout}">
                <button class="button-fancy-large" type="submit"
value="${Resource.msg('global.checkout','locale',null)}" name="${pdict.CurrentForms.cart.checkoutCart.htmlName}">
                    ${Resource.msg('global.checkout','locale',null)}
                </button>

                <isif
condition="${dw.order.PaymentMgr.getPaymentMethod(CybersourceConstants.METHOD_PAYPAL).isActive() &&
dw.system.Site.current.getCustomPreferenceValue('CsEnableExpressPaypal') == true}">
                    <isif
condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('paypalBillingAgreements') &&
!empty(pdict.CurrentCustomer.profile) && !empty(pdict.CurrentCustomer.profile.custom.billingAgreementID)}">
                        <input type="image"
src="https://www.paypal.com/en_US/i/btn/btn_xpressCheckout.gif" alt="Paypal Express"
class="billingAgreementExpressCheckout"/>
                    <iselse>
                        <div class="paypal-button-container-
cart1"></div>
                    </iselse>
                </isif>
            </isif>

```

## Resource.ds

Add below urls in urls json object under ResourceHelper.getUrls method.

```
,
```

```
paypalinitsession : URLUtils.url('CYBPaypal-InitiatePaypalExpress').toString(),
paypalcallback   : URLUtils.https('CYBPaypal-SessionCallback').toString(),
billingagreement : URLUtils.https('CYBPaypal-BillingAgreement').toString(),
orderreview      : URLUtils.https('COSummary-Start').toString()
```

Add below preference in json object under ResourceHelper.getPreferences method

```
,
```

```
ISPAYPALENABLED : (dw.order.PaymentMgr.getPaymentMethod('PAYPAL').isActive() &&
Site.getCurrent().getCustomPreferenceValue('CsEnableExpressPaypal')?true:false)
```

## Checkout.properties

Add billing agreement message for paypal.

```
billing.selectcreditcard=Select Credit Card
```

```
billing.billingagreement=Create Billing Agreement
```

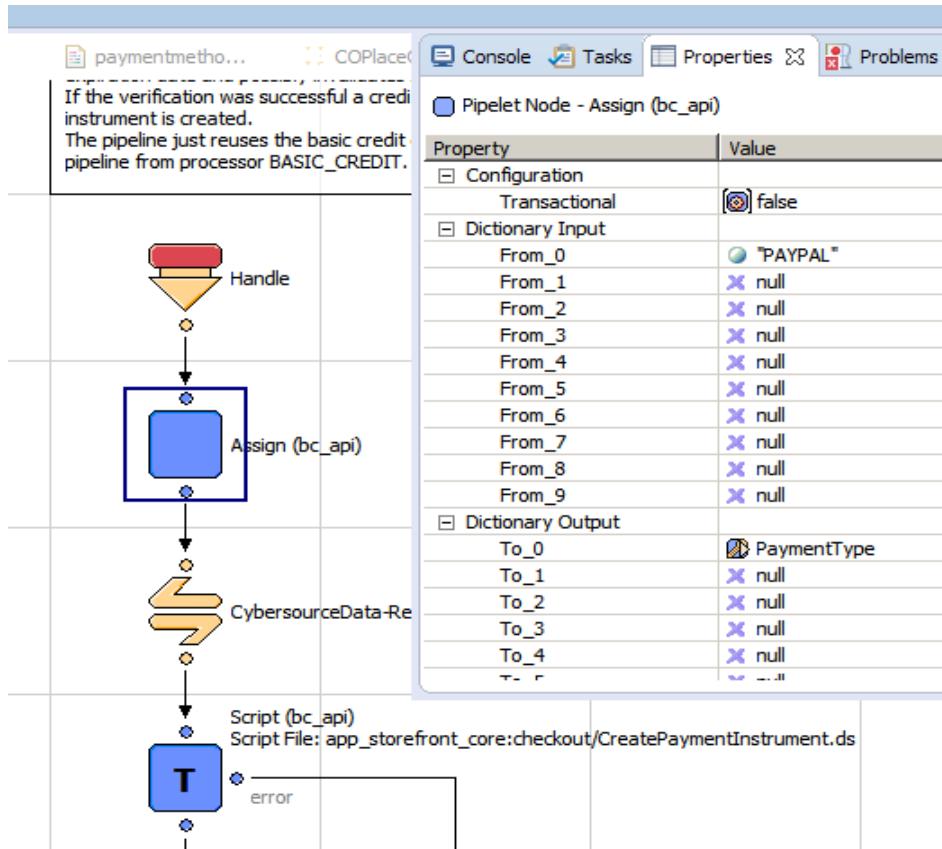
## Paymentmethods.isml

Include cubersource constant at API include section

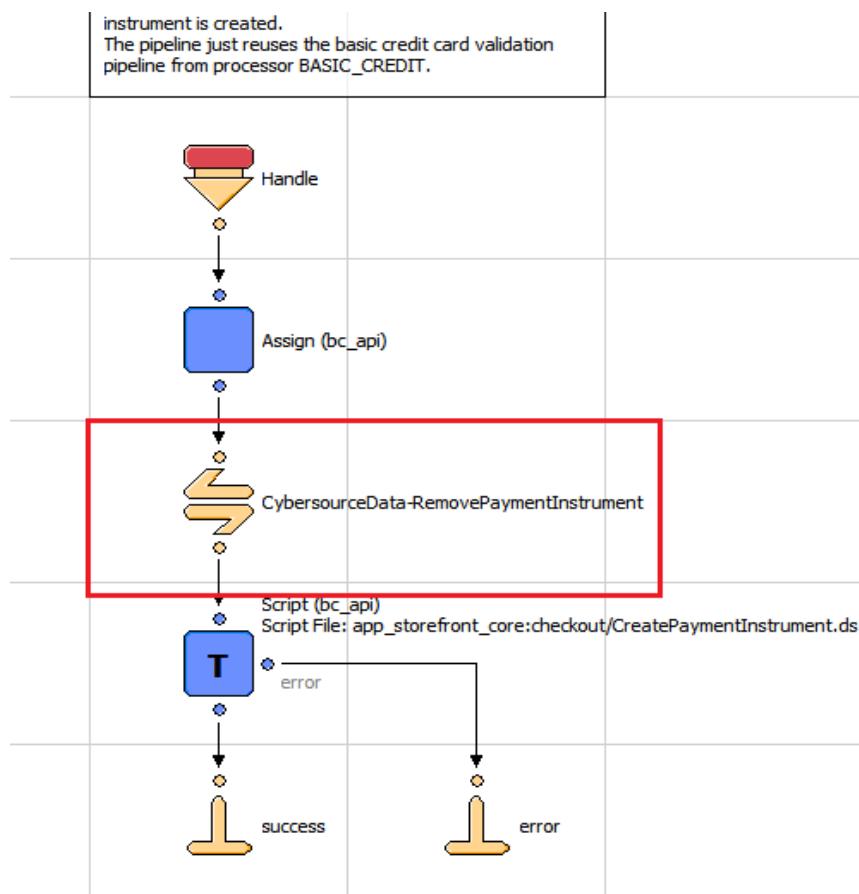
Changes are already covered under custom code > generic section-> paymentmethods.isml

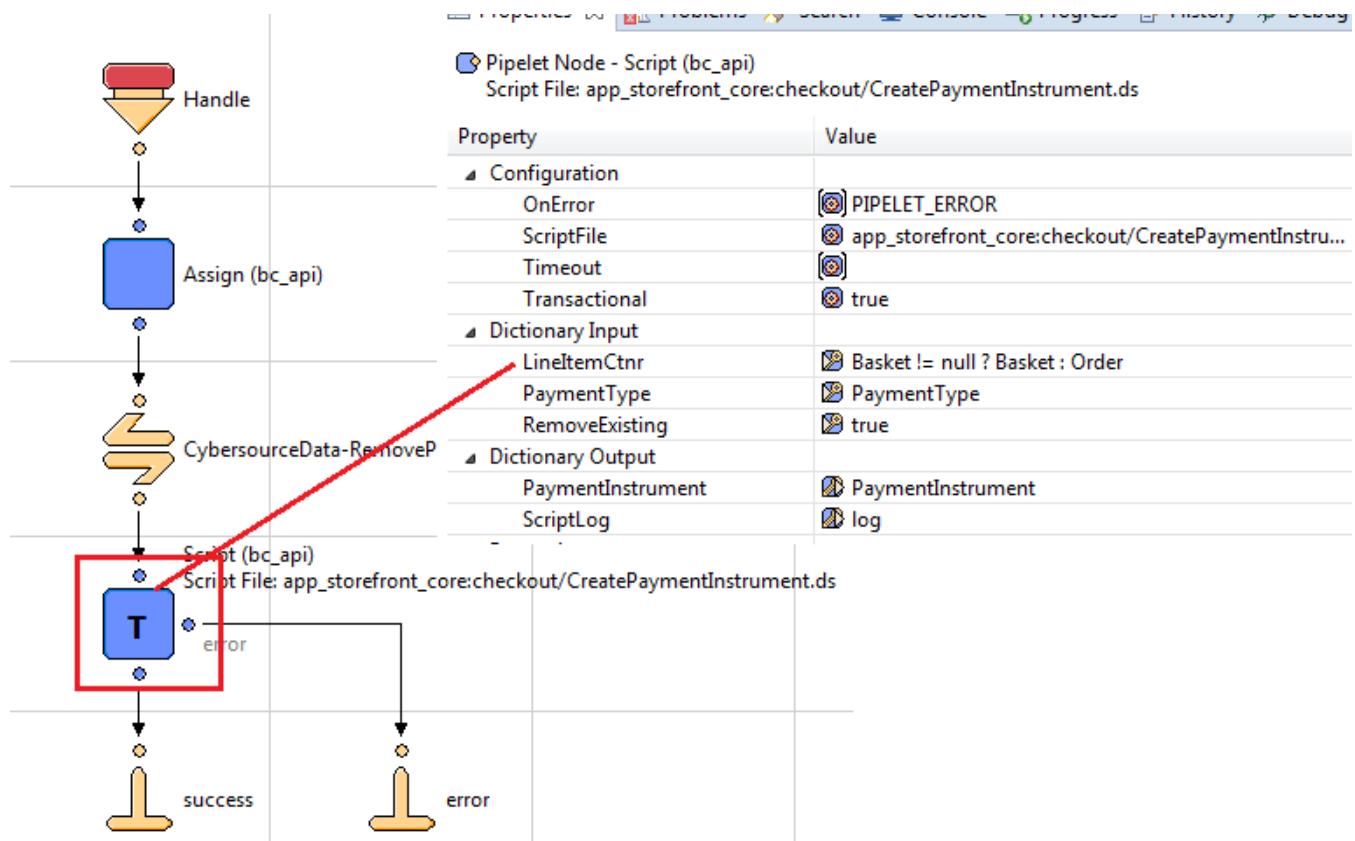
## PAYPAL\_EXPRESS.xml

Add assign node in PAYPAL\_EXPRESS-Handle pipeline and assign PAYPAL in paymentType variable as shown below

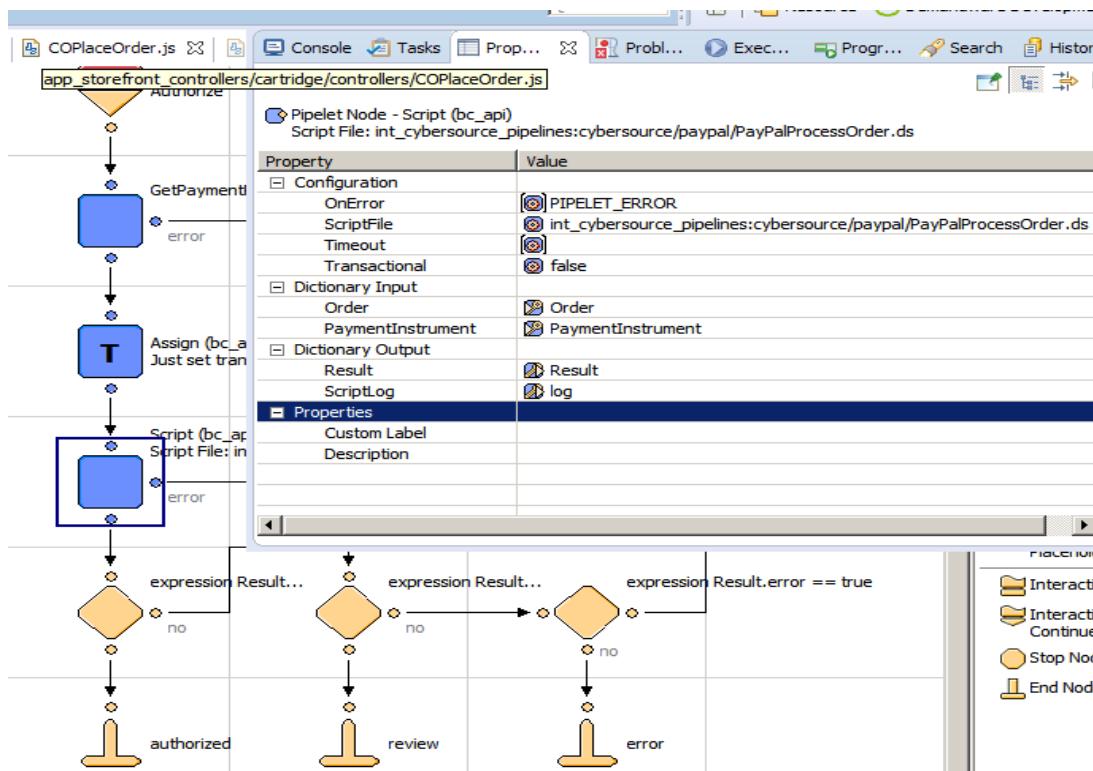


Add call node in Handle pipeline for CybersourceData-RemovePaymentInstrument, as shown below

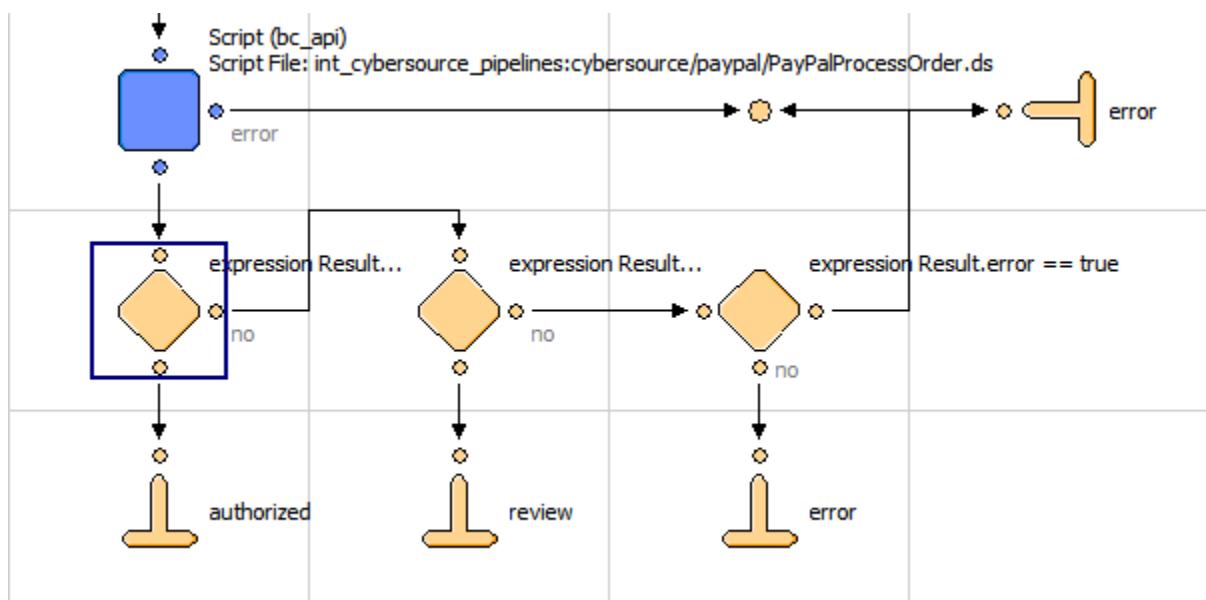




Add a script node for cybersource/paypal/PayPalProcessOrder.ds in PAYPAL\_EXPRESS-Authonize pipeline.



Add decision nodes for various condition i.e authorized, review and error



Add condition as given below

## ValidatePaymentInstruments.ds

Add another condition in if statement

```
Add import
importPackage( dw.web );

if(PaymentInstrument.METHOD_GIFT_CERTIFICATE.equals(pi.paymentMethod) ||
Resource.msg("paymentmethodname.paypal", "cybersource", null).equals(pi.paymentMethod))
{
    continue;
}
```

**PayPal Credit**

## PAYPAL CREDIT.xml

Add assign node in PAYPAL\_CREDIT-Handle pipeline and assign ‘PAYPAL\_CREDIT’ in paymentType variable

**Pipelet Node - Assign (bc\_api)**

Property	Value
Configuration	Transactional: false
Dictionary Input	From_0: "PAYPAL_CREDIT", From_1: null, From_2: null, From_3: null, From_4: null, From_5: null, From_6: null, From_7: null, From_8: null, From_9: null
Dictionary Output	To_0: PaymentType, To_1: null, To_2: null, To_3: null, To_4: null, To_5: null, To_6: null, To_7: null, To_8: null, To_9: null
Properties	Custom Label, Description

**cyclersource... COPlaceOrder.js COBilling.js C**

If the verification was successful a credit card payment instrument is created.  
The pipeline just reuses the basic credit card validation pipeline from processor BASIC\_CREDIT.

```

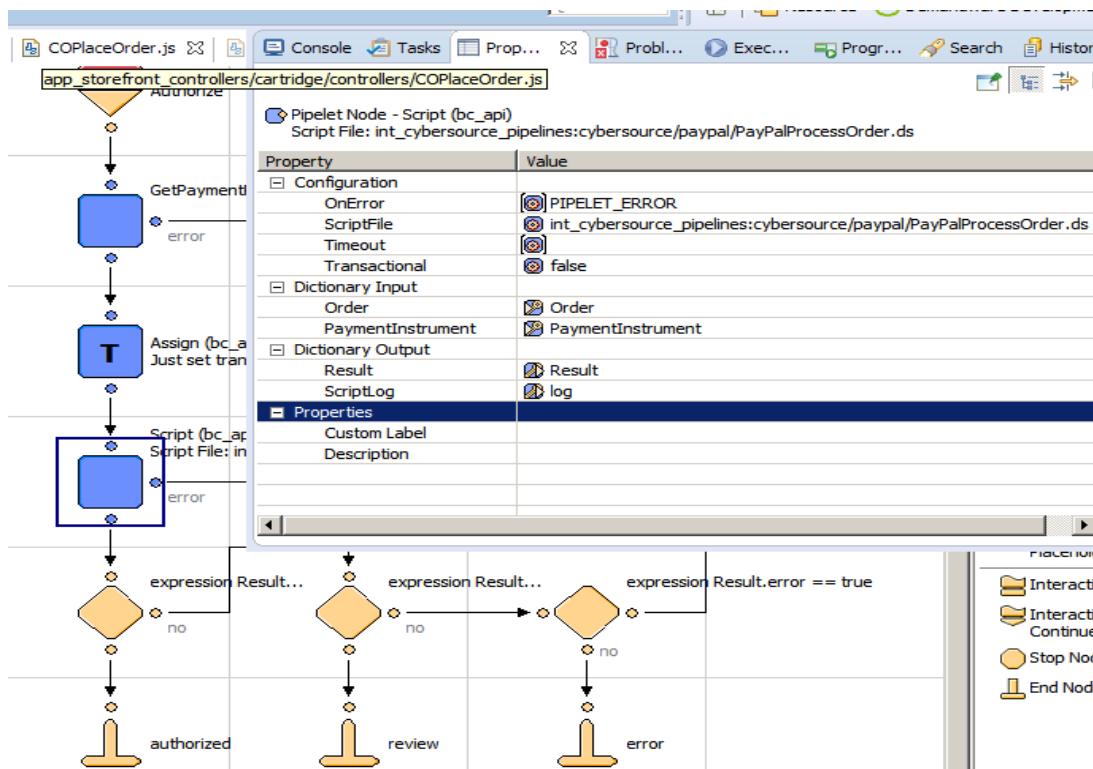
graph TD
    Handle((Handle)) --> Assign[Assign(bc_api)]
    Assign --> T1[RemoveBasketPaymentInstrument(bc_api)]
    T1 --> Script[Script(bc_api) Script File: app_storefront_core:checkout/CreatePaymentInstrument.ds]
    Script -- error --> Error((error))
    Script -- success --> Success((success))
  
```

**Pipelet Node - Script (bc\_api)**  
Script File: app\_storefront\_core:checkout/CreatePaymentInstrument.ds

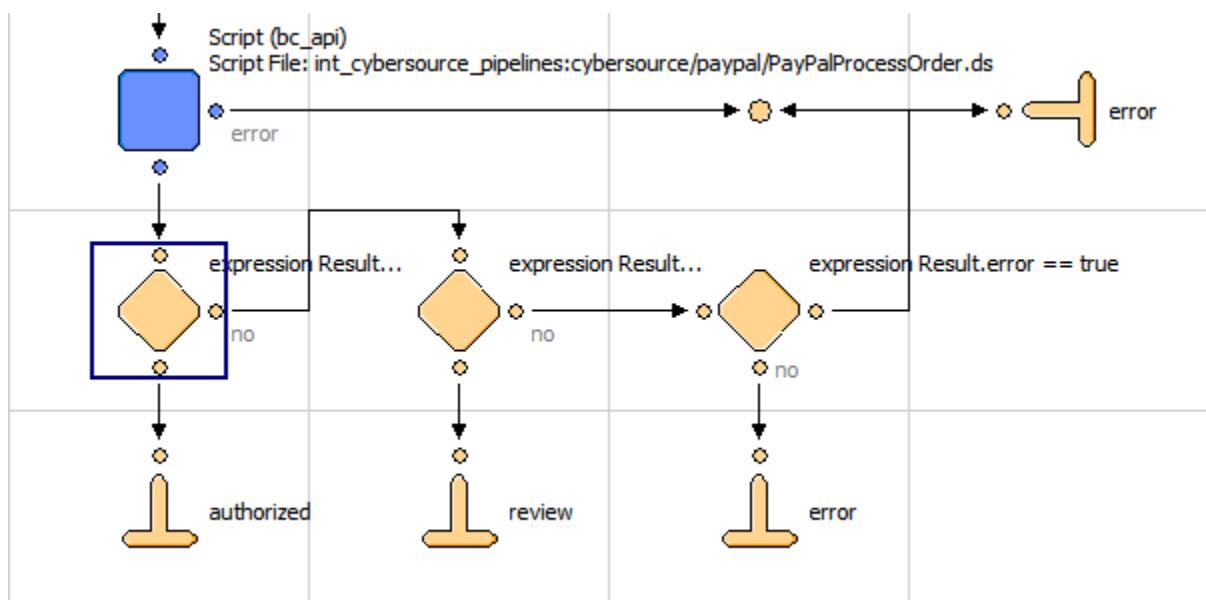
Property	Value
Configuration	OnError: PIPELET_ERROR, ScriptFile: app_storefront_core:checkout/CreatePaymentInstrument.ds, Timeout: 0, Transactional: true
Dictionary Input	LineItemCntr, PaymentType, RemoveExisting
Dictionary Output	PaymentInstrument, ScriptLog
Properties	Custom Label, Description

**Handle** --> **Assign (bc\_api)**  
**Assign (bc\_api)** --> **RemoveBasketPaymentInstrument (bc\_api)**  
**RemoveBasketPaymentInstrument (bc\_api)** --> **script (bc\_api)**  
**script (bc\_api)** --> **success**  
**script (bc\_api)** --> **error**

Add a script node for cyclersource/paypal/PayPalProcessOrder.ds in PAYPAL\_CREDIT-Authorize pipeline.



Add decision nodes for various condition i.e authorized, review and error



Add condition as given below

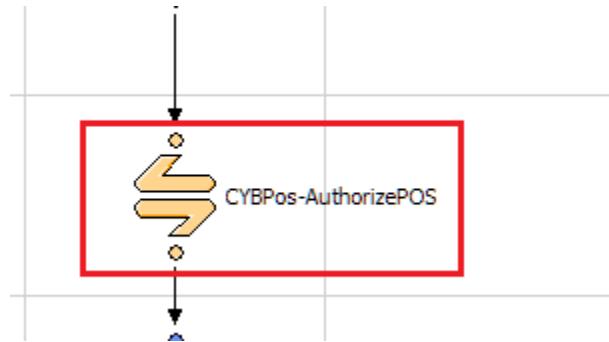
## Paymentmethods.isml

Above mentioned steps for PayPal Express is also required for PayPal credit except minicart.isml and cart.isml. Only additional div for payment-method need to add in paymentmethods.isml

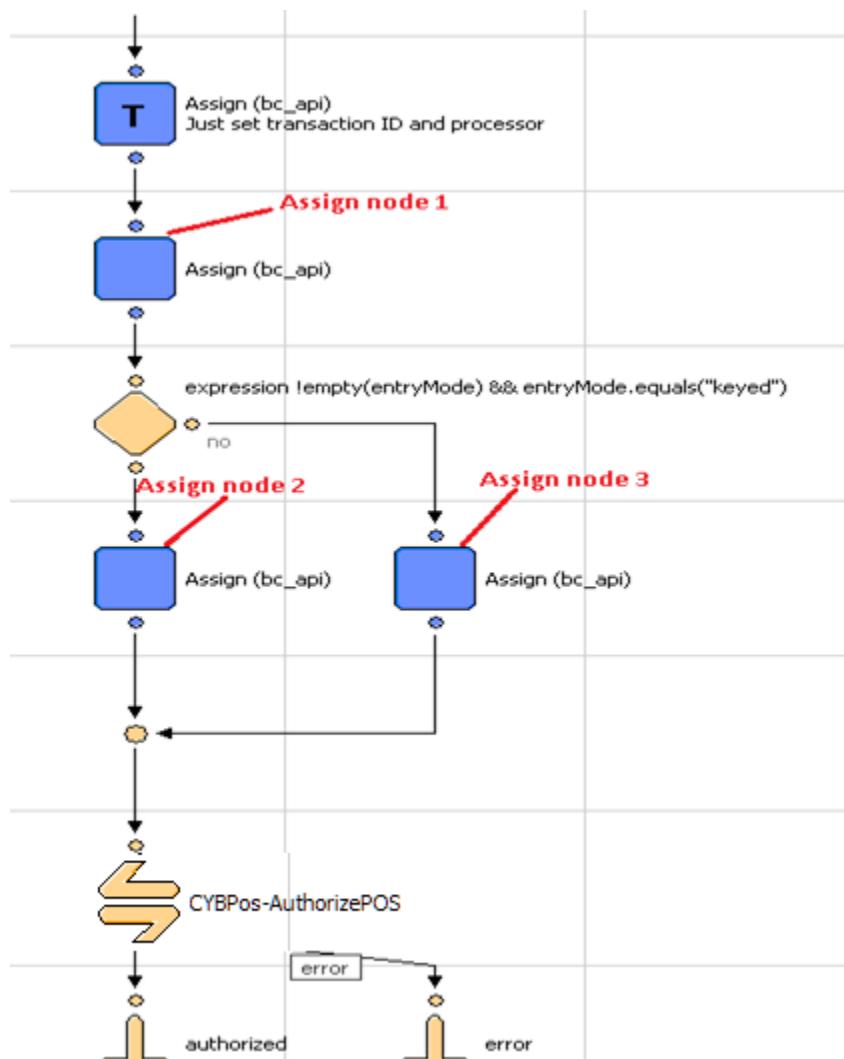
Changes are already covered under custom code > generic section-> paymentmethods.isml

# Retail POS

This integration requires only one sub-pipeline to be integrated to your project. The pipeline screenshot is shown below which needs to be called in your project as required:



This required call node should be integrated at EACreditCard-Authorize pipeline of DSS app as shown below. The track data, expiration date or account number should not be encrypted and may need to be decrypted prior to calling CYBPos -AuthorizePOS depending on the payment terminal used.



Three assign nodes must be used for required node CYBPos-AuthorizePOS to work correctly as shown above. The assign node must set variables based on POS terminal entry mode. Below are the use and description for assignment of variables. Assuming that object.attribute variable used in Assign node will be replaced by actual object/variable to get the required values:

POS terminal entry mode can be set in

`int_ocapi_ext/cartridge/scripts/actions/CaptureCreditCardDetails.ds` as Shown below.

```

var expMonth : Number = 0,
var expYr : Number = 0;
var ccType : String = "";
var mode : String = "swiped";

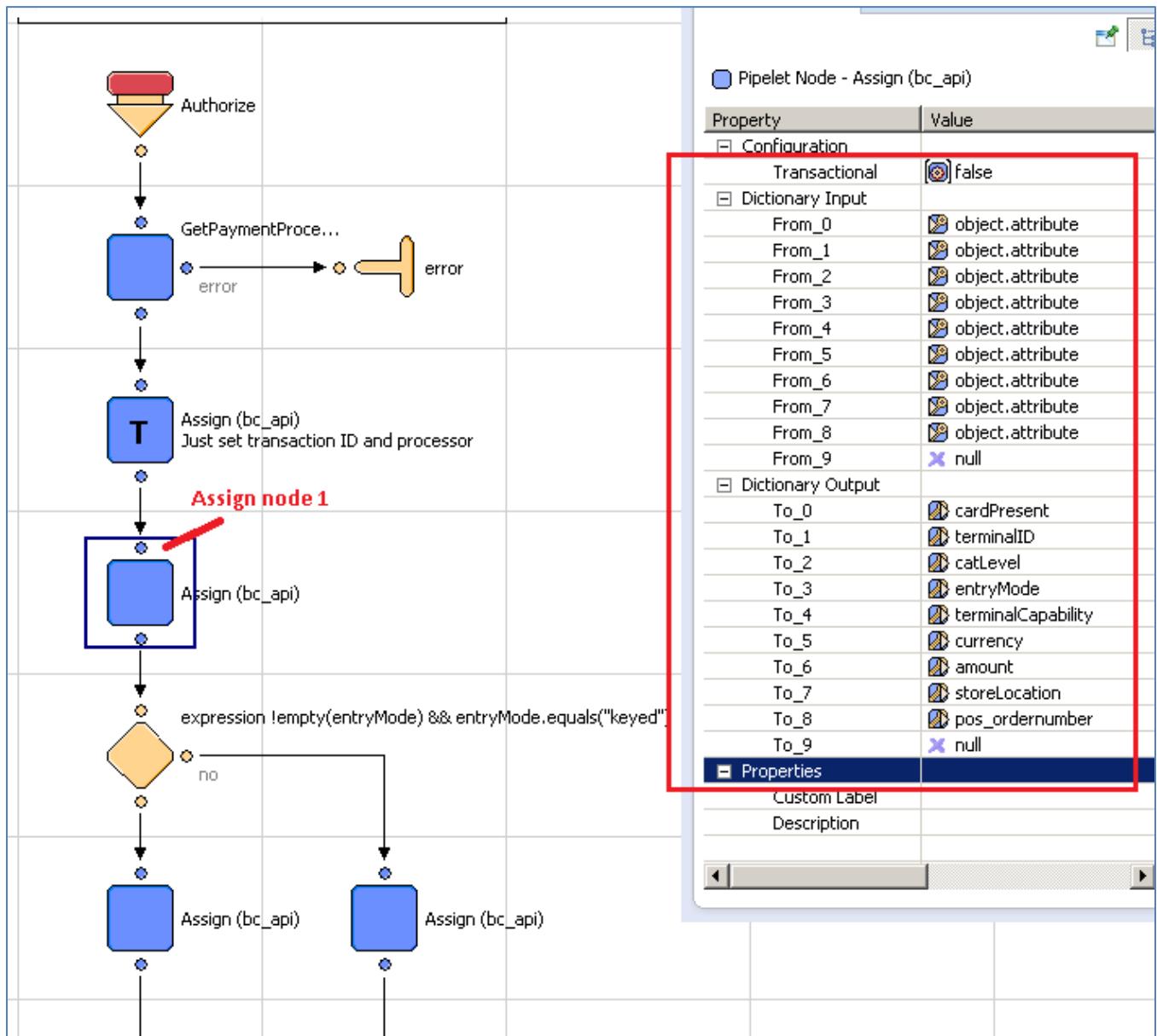
if( empty(track1) && empty(track2) ) {
    name = dw.web.Resource.msg('carddetails.name', 'capturecreditcarddetails',
    ccNumber = args.AccountNumber;
    expMonth = args.ExpirationDate.substring(0,2);
    expYr = args.ExpirationDate.substring(3);
    mode = "keyed";
} else {
    //Begin
    if (empty(track1)) {
        track1 = "";
    }
    name = track1.substr(track1.indexOf("^", 0)+1, track1.indexOf("^", track1.i
    name = name.replace("/", " ");
    ccNumber= track2.substr(1, track2.indexOf("=", 0)-1);
    expMonth = new Number(track2.substr(track2.indexOf("=", 0)+3, 2));
    expYr = new Number(track2.substr(track2.indexOf("=", 0)+1, 2));
}

ccType = "MasterCard";
if (ccNumber.substring(0, 1) == checkForVisaStartNumber && ccNumber.length == v
    ccType = "Visa";
} else if (ccNumber.substring(0, 1) == checkForMasterCardStartNumber && ccNumbe
    ccType = "MasterCard";
} else if (ccNumber.substring(0, 1) == checkForAmexStartNumber && (ccNumber.len
    ccType = "Amex";
}

//Create Xredit Card data object
args.creditCard = {
    owner : name,
    num : ccNumber,
    type : ccType,
    month : expMonth,
    year : expYr,
    entryMode: mode
};

```

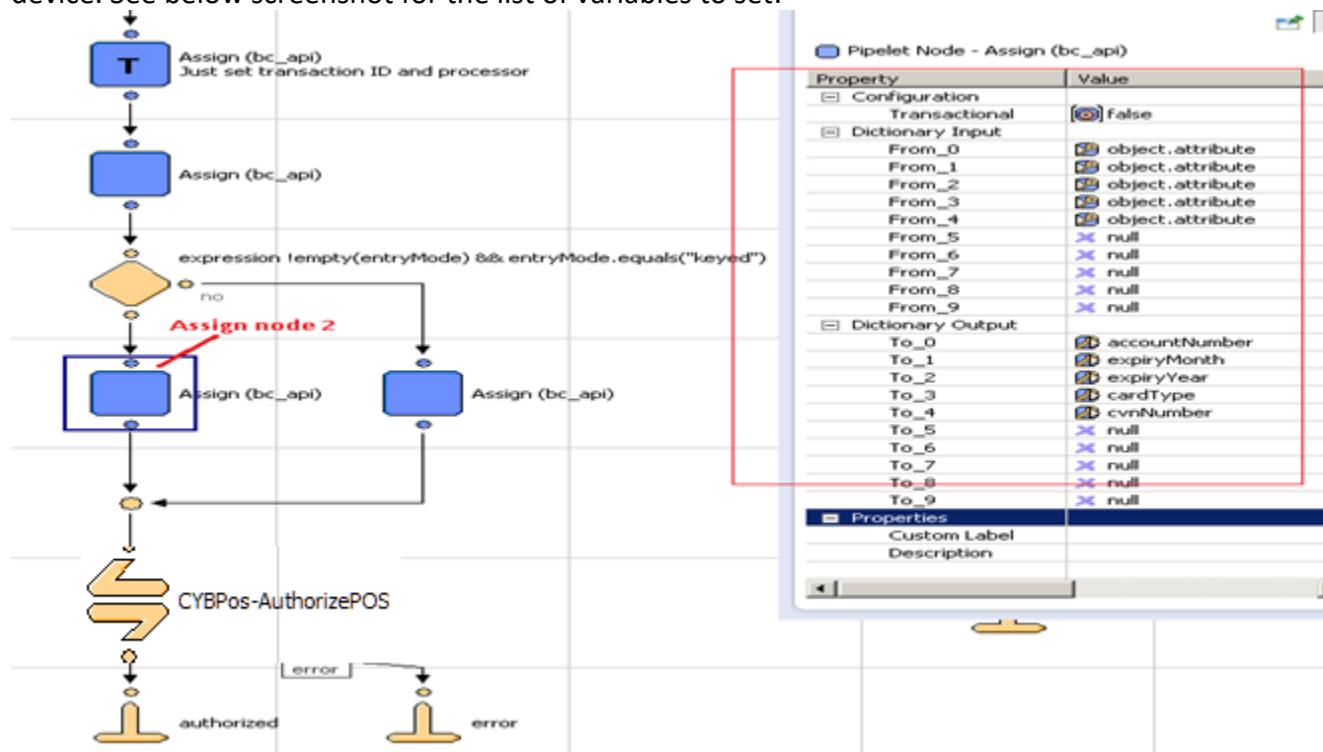
1. Use of Assign node labeled as “Assign node 1” above. This will set the common variables for the transaction irrespective of entry mode used. Below is the screenshot of variables used in this assign node:



Example input variables from DSS:

Pipelet Node - Assign (bc_api)	
Set common variables	
Property	Value
Configuration	
Transactional	<input checked="" type="checkbox"/> false
Dictionary Input	
From_0	<input checked="" type="checkbox"/> "Y"
From_1	<input checked="" type="checkbox"/> RequestObject.terminal_id
From_2	<input checked="" type="checkbox"/> "6"
From_3	<input checked="" type="checkbox"/> creditCard.entryMode
From_4	<input checked="" type="checkbox"/> "2"
From_5	<input checked="" type="checkbox"/> null
From_6	<input checked="" type="checkbox"/> RequestObject.auth_amount.toString()
From_7	<input checked="" type="checkbox"/> dw.catalog.StoreMgr.getStore(CurrentSession.custom.agent.storeId).getStateCode()
From_8	<input checked="" type="checkbox"/> RequestObject.order_no
From_9	<input checked="" type="checkbox"/> null
Dictionary Output	
To_0	<input checked="" type="checkbox"/> cardPresent
To_1	<input checked="" type="checkbox"/> terminalID
To_2	<input checked="" type="checkbox"/> catLevel
To_3	<input checked="" type="checkbox"/> entryMode
To_4	<input checked="" type="checkbox"/> terminalCapability
To_5	<input checked="" type="checkbox"/> currency
To_6	<input checked="" type="checkbox"/> amount
To_7	<input checked="" type="checkbox"/> storeLocation
To_8	<input checked="" type="checkbox"/> pos_orderNumber
To_9	<input checked="" type="checkbox"/> null
Properties	
Custom Label	Set common variables
Description	

2. Use of Assign node labeled as “Assign node 2” if keyed entry mode is used on the POS terminal device. See below screenshot for the list of variables to set:

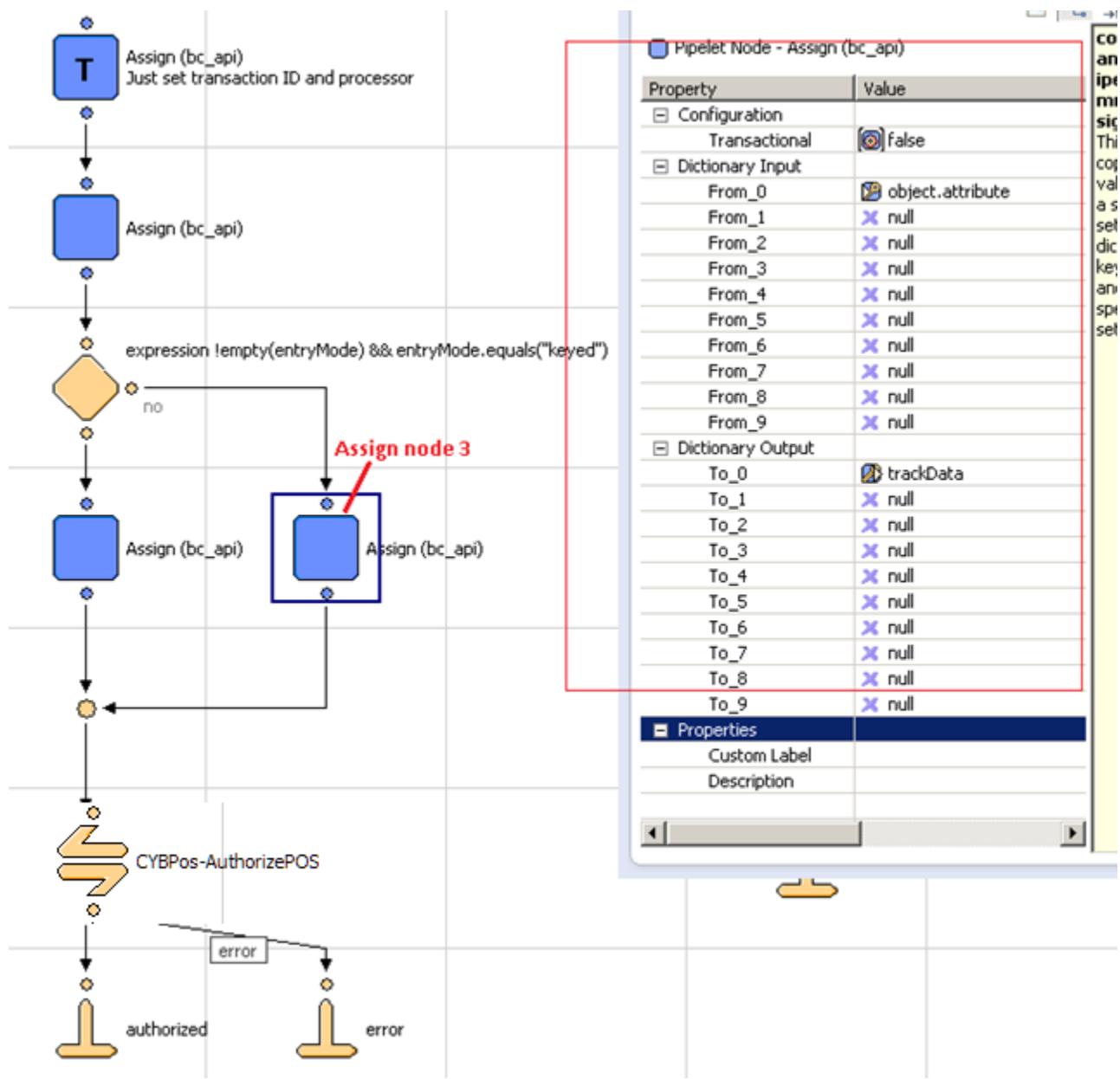


Example input variables from DSS:

 Pipelet Node – Assign (bc\_api)  
Set keyed variables

Property	Value
▼ Configuration	
Transactional	[ <input checked="" type="checkbox"/> ] false
▼ Dictionary Input	
From_0	[  ] creditCard.num
From_1	[  ] creditCard.month
From_2	[  ] creditCard.year
From_3	[  ] null
From_4	[  ] null
From_5	[  ] null
From_6	[  ] null
From_7	[  ] null
From_8	[  ] null
From_9	[  ] null
▼ Dictionary Output	
To_0	[  ] accountNumber
To_1	[  ] expiryMonth
To_2	[  ] expiryYear
To_3	[  ] cardType
To_4	[  ] cvnNumber
To_5	[  ] null
To_6	[  ] null
To_7	[  ] null
To_8	[  ] null
To_9	[  ] null
▼ Properties	
Custom Label	Set keyed variables
Description	

1. Use of Assign node labeled as “Assign node 3” if swiped entry mode is used on the POS terminal device. See below screenshot for the variable to set:

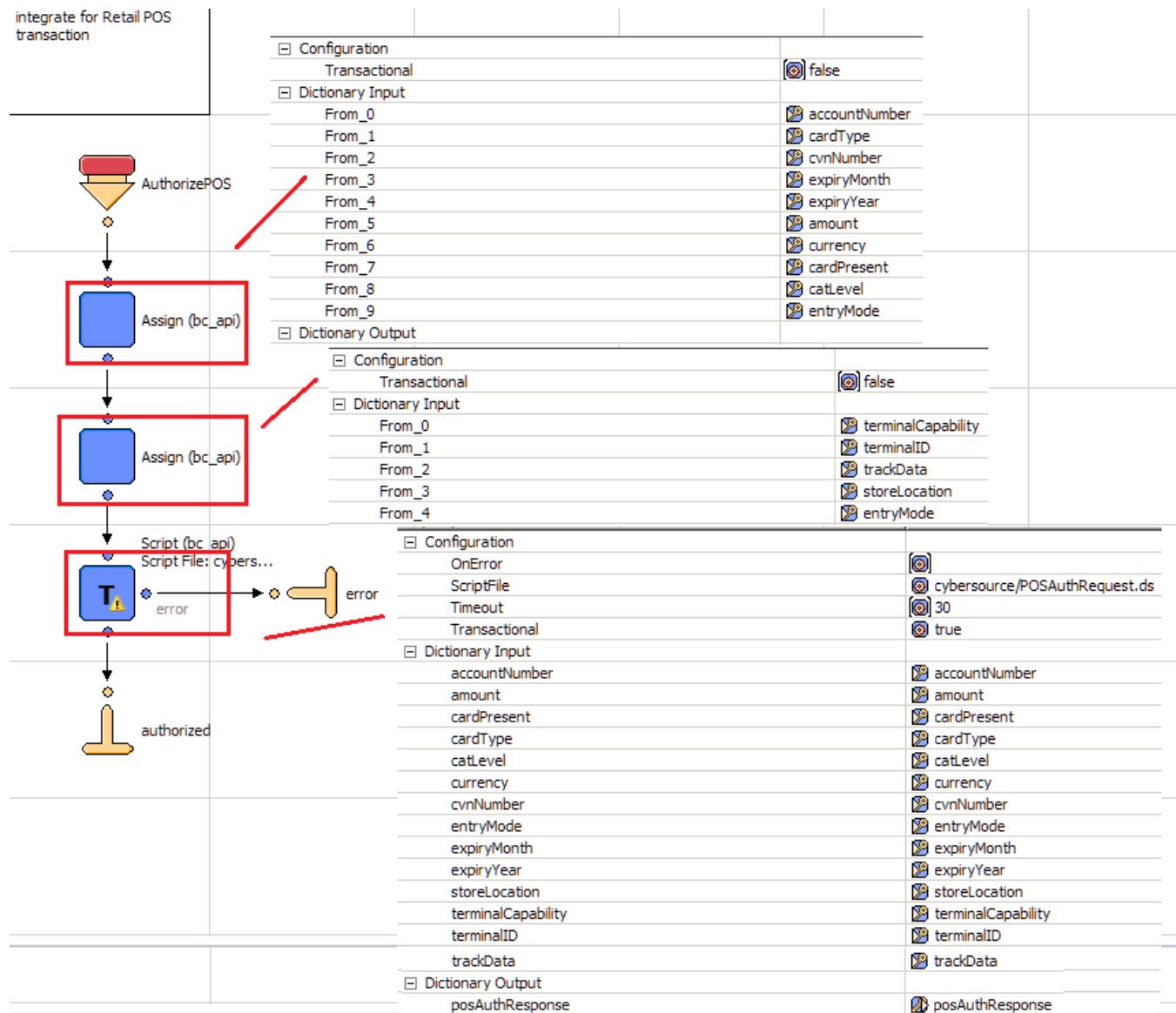


Example of input variables from DSS:

 Pipelet Node – Assign (bc\_api)  
Set swiped variables

Property	Value
▼ Configuration	
Transactional	<input checked="" type="checkbox"/> false
▼ Dictionary Input	
From_0	<input checked="" type="checkbox"/> creditCard.track1 + creditCard.track2
From_1	<input checked="" type="checkbox"/> null
From_2	<input checked="" type="checkbox"/> null
From_3	<input checked="" type="checkbox"/> null
From_4	<input checked="" type="checkbox"/> null
From_5	<input checked="" type="checkbox"/> null
From_6	<input checked="" type="checkbox"/> null
From_7	<input checked="" type="checkbox"/> null
From_8	<input checked="" type="checkbox"/> null
From_9	<input checked="" type="checkbox"/> null
▼ Dictionary Output	
To_0	<input checked="" type="checkbox"/> trackData
To_1	<input checked="" type="checkbox"/> null
To_2	<input checked="" type="checkbox"/> null
To_3	<input checked="" type="checkbox"/> null
To_4	<input checked="" type="checkbox"/> null
To_5	<input checked="" type="checkbox"/> null
To_6	<input checked="" type="checkbox"/> null
To_7	<input checked="" type="checkbox"/> null
To_8	<input checked="" type="checkbox"/> null
To_9	<input checked="" type="checkbox"/> null
▼ Properties	
Custom Label	Set swiped variables
Description	

Below is the snapshot of required pipeline.



Below is the list of variables with description. One or two variables become mandatory depending upon other variables and few are optional:

S. N. O.	Variable name	Description	Note
1	cardPresent	Indicates whether the card is present at the time of retail POS transaction. Possible values: N – card not present Y – card is present	Required.
2	catLevel	Type of cardholder activated terminal. Possible values:	Optional. This

		1 – Automated dispensing machine 2 – Self-service terminal 3 – Limited amount terminal 4 – In-flight commerce (IFC) terminal 5 – Radio frequency device 6 – Mobile acceptance terminal	variable becomes required if terminalID variable is set to a value.
3	entryMode	Method of entering credit card information into the POS terminal. Possible values: keyed – Manually keyed into POS terminal. swiped – Read from credit card magnetic stripe.	Required.
4	terminalCapability	POS terminal's capability. Possible values: 1 – Terminal has a magnetic stripe reader only. 2 – Terminal has a magnetic stripe reader and manual entry capability. 3 – Terminal has manual entry capability only.	Required.
5	terminalID	Identifier for the terminal at your retail location. You can define this value yourself, but consult with the processor for requirements. Terminal ID(s) are configurable in a custom object named 'POS_TerminalMapping' (Refer custom object definition XML to be imported). Here terminal device's serial number will be mapped to a Terminal ID. This variable should be assigned device's serial number. Code will pick configured Terminal ID if found and passed to CyberSource API in request.	Optional.
6	trackData	Card's track 1 and 2 data. Some processors require track 1 data, some processors require track 2 data, and some processors require both track 1 data and track 2 data. To make sure that you provide the required information regardless of the processor that you use now or may use in the future, CyberSource recommends that you send both track 1 and track 2 data in your retail POS requests. The sentinels are required. The start sentinel (%) indicates the initial data position on the track. The end sentinel (?) follows the final character of data recorded on the track. Details of track 1 and track 2 data for the example <b>%B411111111111111^SMITH/JOHN^2012101976</b>	Required if entryMode=swiped.

		<b>11000086800000?;4111111111111111=20121019 761186800000?</b> Track 1 – the track 1 data precedes the semicolon (;) Track 2 – the track 2 data follows the semicolon (;)	
7	currency	Currency used for order. For possible values refer <a href="#">ISO Standard Currency Codes</a>	If this variable is not set with any currency code then default currency code is retrieved configured for web store in Business Manager.
8	amount	Grand total for the order.	
9	accountNumber	Customer's credit card number.	This variable becomes mandatory if entryMode=keyed.
10	cardType	Type of card to authorize. Possible values: 001 – Visa 002 – MasterCard 003 – American Express 004 – Discover 005 – Diners Club 006 – Carte Blanche 007 – JCB	CyberSource strongly recommends that you send the card type even when it is optional for your processor and card

			type. Omitting the card type can cause the transactio n to be processed with the wrong card type.
11	cvnNumber	This number is never transferred during card swipes.	Optional.
12	expiryMonth	Two-digit month in which credit card expires. Format: MM. Possible values: 01 through 12. Leading 0 is required.	Required if entryMod e=keyed.
13	expiryYear	Four-digit year in which credit card expires. Format: YYYY.	Required if entryMod e=keyed.
14	storeLocatio n	Store's physical location. This is use to configure merchant's ID and security key in a custom object to call CyberSource API for the transaction. This is dependent upon merchant how they wanted to link store(s) to Merchant ID (MID). For e.g. if merchant has 3 separate CyberSource merchant ID and want to use one MID for store(s) in Massachusetts, 2 <sup>nd</sup> MID for store(s) in New York City, etc. then assign this variable as MA or Massachusetts or any string representing the location AND configure the same value as POS Location field for POS_MerchantIDs custom object in Business Manager after import.	Location can be set as State code or Zip code or city etc. For e.g. MA (Massach usetts) or 01803 (Burlingto n, MA) or Burlington
15	pos_ordernumb er	Order number for the transaction needs to be set to this variable	Required

## ApplePay REST Interface Integration ways with Device/APP

The Interface prepared as part of the document is for testing purpose, during real-time checkout journey of ApplePay there can be multiple ways to utilize interface AS whole or its components. This section depicts anticipated three ways to utilize the interface in real-time, though these ways are not tested (not in scope). Also below steps are assumed to be developed in app/device before utilization of interface components.

1. Device or App have code written for checkout journey where user opted for ApplePay
2. ApplePay to provide response either Payload or NetworkToken related data
3. The above response must be available in script file defined in hook (say: hook script) where OCAPI hook function to be developed

### Interface AS Service

- a. Using "Interface AS Service" has limitation that merchant site MUST disable "Limit Storefront Order" setting
- b. Register interface in service initialization script file say "SoapServiceInit.ds"
- c. Define above service end point as merchant site URL for "CYBApplePay-Authorize" in BM service configurations
- d. Define user/password to be picked from site preferences "cybApplePayInterfaceUser", "cybApplePayInterfacePassword" in service initialization script file say "SoapServiceInit.ds"
- e. The Hook script file having OCAPI hook defined invoke service endpoint by passing required JSON input. (The JSON Input format defined in appropriate REST Interface section above in the document.)
- f. Interpret the response received and display thank you page on success and order failure page on failure

### Interface Direct Functions [when basket or order available]

- a. This integration way is recommended when hook script has order or basket available along with other service required inputs. Also merchant site enabled "Limit Storefront Order" setting
- b. The Hook script file having OCAPI hook defined call below functions directly and before calling also validate inputs are valid.
- c. The function "**MobilePaymentAuthRequest**" is called when Payload is available  
**MobilePaymentFacade.MobilePaymentAuthRequest(jsonParam)**  
 JsonParam will contain lineItemCtnr : dw.order.LineItemCtnr, orderNo : String, IPAddress : String, encryptedPaymentData.

Parameter	Type
lineItemCtnr	dw.order.LineItemCtnr
orderNo	String
IPAddress	String
encryptedPaymentData	String

- d. The function “**MobilePaymentAuthRequest**” is called when network token is available

**MobilePaymentFacade.MobilePaymentAuthRequest(jsonParam)**

jsonParam will contain lineItemCtnr : dw.order.LineItemCtnr, orderNo : String, IPAddress : String, cryptogram, networkToken, tokenExpirationMonth, tokenExpirationYear, cardType.

Parameter	Type
lineItemCtnr	dw.order.LineItemCtnr
orderNo	String
IPAddress	String
Cryptogram	String
networkToken	String
tokenExpirationMonth	String
tokenExpirationYear	String
cardType	String

- e. This function called to update the payment instrument with the service response

PaymentInstrumentUtils.UpdatePaymentTransactionCardAuthorize(paymentInstrument, ServiceResponseObject: Object)

Parameter	Type
paymentInstrument	dw.order.PaymentInstrument
ServiceResponseObject	Object

- f. Interpret the response received and display thank you page on success and order failure page on failure

## Interface Functions [when required service request objects available]

- a. This integration way is recommended when hook script has order or basket available in for of JSON instead of object along with other service required inputs. Also merchant site enabled “Limit Storefront Order” setting
- b. Hook script to prepare CyberSource service related objects like billto, shipto, purchaseTotal etc.
- c. The Hook script file having OCAPI hook defined call below functions and before calling also validate inputs are valid.
- d. The function “**MobilePaymentAuthRequest**” is called when Payload is available

**MobilePaymentFacade.MobilePaymentAuthRequest(jsonParam)**

jsonParam will contain billTo, shipTo, purchaseObject, items, orderNo : String, IPAddress : String, encryptedPaymentData.

Parameter	Type
billTo	Cybersource_BillTo_Object
shipTo	Cybersource_ShipTo_Object
purchaseObject	Cybersource_PurchaseTotals_Object
Items	Cybersource_Item_Object
orderNo	String
IPAddress	String

<b>encryptedPaymentData</b>	String
-----------------------------	--------

- e. The function “**MobilePaymentAuthRequest**” is called when Network Token is available  
**MobilePaymentFacade.MobilePaymentAuthRequest(jsonParam)**  
 jsonParam will contain billTo, shipTo, purchaseObject, items, orderNo : String, IPAddress : String, cryptogram, networkToken, tokenExpirationMonth, tokenExpirationYear, cardType.

Parameter	Type
<b>billTo</b>	Cybersource_BillTo_Object
<b>shipTo</b>	Cybersource_ShipTo_Object
<b>purchaseObject</b>	Cybersource_PurchaseTotals_Object
<b>Items</b>	Cybersource_Item_Object
<b>orderNo</b>	String
<b>IPAddress</b>	String
<b>Cryptogram</b>	String
<b>networkToken</b>	String
<b>tokenExpirationMonth</b>	String
<b>tokenExpirationYear</b>	String
<b>cardType</b>	String

- f. This function called to update the payment instrument with the service response  
**PaymentInstrumentUtils.UpdatePaymentTransactionCardAuthorize(paymentInstrument, ServiceResponseObject: Object)**

Parameter	Type
<b>paymentInstrument</b>	dw.order.PaymentInstrument
<b>ServiceResponseObject</b>	Object

- g. Interpret the response received and display thank you page on success and order failure page on failure

## AndroidPay REST Interface Integration ways with Device/APP

The Interface prepared as part of the document is for testing purpose, during real-time checkout journey of AndroidPay there can be multiple ways to utilize interface AS whole or its components. This section depicts anticipated three ways to utilize the interface in real-time, though these ways are not tested (not in scope). Also below steps are assumed to be developed in app/device before utilization of interface components.

4. Device or App have code written for checkout journey where user opted for AndroidPay
5. AndroidPay to provide response either Payload or NetworkToken related data
6. The above response must be available in script file defined in hook (say: hook script) where OCAPI hook function to be developed

## Interface AS Service

- a. Using “Interface AS Service” has limitation that merchant site MUST disable “Limit Storefront Order” setting
- b. Register interface in service initialization script file say “SoapServiceInit.ds”
- c. Define above service end point as merchant site URL for “CYBAndroidPay -Authorize” in BM service configurations
- d. Define user/password to be picked from site preferences “cybAndroidPayInterfaceUser”, “cybAndroidPayInterfacePassword” in service initialization script file say “SoapServiceInit.ds”
- e. The Hook script file having OCAPI hook defined invoke service endpoint by passing required JSON input. (The JSON Input format defined in appropriate REST Interface section above in the document.)
- f. Interpret the response received and display thank you page on success and order failure page on failure

## Interface Direct Functions [when basket or order available]

- g. This integration way is recommended when hook script has order or basket available along with other service required inputs. Also merchant site enabled “Limit Storefront Order” setting
- h. The Hook script file having OCAPI hook defined call below functions directly and before calling also validate inputs are valid.
- i. The function “**MobilePaymentAuthRequest**” is called when Payload is available  
**MobilePaymentFacade. MobilePaymentAuthRequest (JSONParams)**.

JSONParam will contains dw.order.LineItemCtnr, orderNo , IPAddress, encryptedPaymentData

Parameter	Type
<b>lineItemCtnr</b>	dw.order.LineItemCtnr
<b>orderNo</b>	String
<b>IPAddress</b>	String
<b>encryptedPaymentData</b>	String

The function “**MobilePaymentAuthRequest**” is called when network token is available

**MobilePaymentFacade. MobilePaymentAuthRequest (MobilePaymentAuthRequest (JSONParams))**.

- j. JSONParam will contains lineItemCtnr : dw.order.LineItemCtnr, orderNo : String, IPAddress : String, cryptogram, networkToken, tokenExpirationMonth, tokenExpirationYear, cardType

Parameter	Type
<b>lineItemCtnr</b>	dw.order.LineItemCtnr
<b>orderNo</b>	String
<b>IPAddress</b>	String

<b>Cryptogram</b>	String
<b>networkToken</b>	String
<b>tokenExpirationMonth</b>	String
<b>tokenExpirationYear</b>	String
<b>cardType</b>	String

- k. This function called to update the payment instrument with the service response  
**PaymentInstrumentUtils.UpdatePaymentTransactionCardAuthorize(paymentInstrument, ServiceResponseObject: Object)**

Parameter	Type
<b>paymentInstrument</b>	<code>dw.order.PaymentInstrument</code>
<b>ServiceResponseObject</b>	<code>Object</code>

- l. Interpret the response received and display thank you page on success and order failure page on failure

### Interface Functions [when required service request objects available]

- h. This integration way is recommended when hook script has order or basket available in for of JSON instead of object along with other service required inputs. Also merchant site enabled “Limit Storefront Order” setting
- i. Hook script to prepare CyberSource service related objects like billto, shipto, purchaseTotal etc.
- j. The Hook script file having OCAPI hook defined call below functions and before calling also validate inputs are valid.
- k. The function “**MobilePaymentFacade.MobilePaymentAuthRequest**” is called when Payload is available

**MobilePaymentFacade.MobilePaymentAuthRequest (paymentAPIRequestParams )**

paymentAPIRequestParams will contain billTo, shipTo, purchaseObject, items, orderNo : String, IPAddress : String, encryptedPaymentData.

Parameter	Type
<b>billTo</b>	<code>Cybersource_BillTo_Object</code>
<b>shipTo</b>	<code>Cybersource_ShipTo_Object</code>
<b>purchaseObject</b>	<code>Cybersource_PurchaseTotals_Object</code>
<b>Items</b>	<code>Cybersource_Item_Object</code>
<b>orderNo</b>	<code>String</code>
<b>IPAddress</b>	<code>String</code>
<b>encryptedPaymentData</b>	<code>String</code>

- l. The function “**MobilePaymentAuthRequest**” is called when Network Token is available  
**MobilePaymentFacade.MobilePaymentAuthRequest(paymentAPIRequestParams )**

paymentAPIRequestParams will contain billTo, shipTo, purchaseObject, items, orderNo : String, IPAddress : String, cryptogram, networkToken, tokenExpirationMonth, tokenExpirationYear, cardType.

Parameter	Type
<b>billTo</b>	Cybersource_BillTo_Object
<b>shipTo</b>	Cybersource_ShipTo_Object
<b>purchaseObject</b>	Cybersource_PurchaseTotals_Object
<b>Items</b>	Cybersource_Item_Object
<b>orderNo</b>	String
<b>IPAddress</b>	String
<b>Cryptogram</b>	String
<b>networkToken</b>	String
<b>tokenExpirationMonth</b>	String
<b>tokenExpirationYear</b>	String
<b>cardType</b>	String

- m. This function called to update the payment instrument with the service response

**PaymentInstrumentUtils.UpdatePaymentTransactionCardAuthorize**(paymentInstrument, ServiceResponseObject: Object)

Parameter	Type
<b>paymentInstrument</b>	dw.order.PaymentInstrument
<b>ServiceResponseObject</b>	Object

- n. Interpret the response received and display thank you page on success and order failure page on failure

## Visa Checkout

### billing.js

- 1.) Update updatePaymentmethod function

Add a condition just after selectedPaymentMethod condition to display or hide visa checkout button on selected payment methods as 'VISA\_CHECKOUT'.

[Note: Below changes are covered in custom code > Generic section > billing.js, defined here for reference only]

Sample code :

```
if (paymentMethodID=="VISA_CHECKOUT") {
    $(".continue-place-order").hide();
```

```

        $(".visacheckoutbutton").show();
    }
    else {
        $(".continue-place-order").show();
        $(".visacheckoutbutton").hide();
    }
}

```

```

function updatePaymentMethod(paymentMethodID) {
    var $paymentMethods = $('.payment-method');
    $paymentMethods.removeClass('payment-method-expanded');

    var $selectedPaymentMethod = $paymentMethods.filter('[data-method=' + paymentMethodID + ']');
    if ($selectedPaymentMethod.length === 0) {
        $selectedPaymentMethod = $('[data-method="Custom"]');
    }

    if (paymentMethodID=="VISA_CHECKOUT") {
        $(".continue-place-order").hide();
        $(".visacheckoutbutton").show();
    }
    else {
        $(".continue-place-order").show();
        $(".visacheckoutbutton").hide();
    }
}

```

## paymentmethods.isml

- 1.) Add condition for Visa Checkout error handling just after closing of </legend> block.

[Note: Below snippet is for reference purpose only, changes are already covered under custom code > generic section -> COPlaceOrder.js]

```

<isif condition="${ pdict.VisaCheckoutError != null || pdict.SecureAcceptanceError != null}">
    <legend>
        ${Resource.msg('billing.paymentheader','checkout',null)}
        <div class="dialog-required"> <span class="required-indicator">&#8226; <em>${Resource.msg('global.requiredfield','locale',null)}</em></span></div>
    </legend>
    <isif condition="${pdict.PaypalSetServiceError != null || pdict.VisaCheckoutError != null || pdict.SecureAcceptanceError != null}">
        <div class="error-form">${Resource.msg('confirm.error.declined', 'checkout',null)}</div>
    </isif>

```

## billing.isml

Add class on “continue to place order” button that would be used in billing.js to hide or show button based on payment method selection below isbonusdiscountlineitem tag

```

<div class="form-row form-row-button">
    <button class="button-fancy-Large secureacceptance continue-place-order"
        type="button" name="${pdict.CurrentForms.billing.save.htmlName}"
        value="${Resource.msg('global.continueplaceorder','Locale',null)}"><span>${Resource.msg('
        global.continueplaceorder','locale',null)}</span></button>

```

```
</div>
```

### Include Visa Checkout Button

Add following div section after the form ends

```
<div class="visacheckoutbutton hide" style="text-align: center;">
<isinclude url="${URLUtils.url('CYBVisaCheckout-Button')}" />
</div>
```

## cart.isml

### 1.) Include Visa checkout button:

Add following lines before cart-recommendations div

```
<!-- BEGIN Visa Checkout code -->
<isif condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('cybVisaButtonOnCart')}">
    <isif condition="${pdict.CurrentHttpParameterMap.visacheckout.value}">
        <isinclude url="${URLUtils.url('CYBVisaCheckout-Button','visacheckout','pdict.CurrentHttpParameterMap.visacheckout.value')}" />
    <iselse>
        <isinclude url="${URLUtils.url('CYBVisaCheckout-Button')}" />
    </isif>
</isif>
<!-- END Visa Checkout code -->
```

## minicart.isml

### 1.) Add following line in div having id <div class="mini-cart-totals"> before checkout button

```
<!-- BEGIN Visa Checkout code -->
<isif condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('cybVisaButtonOnCart')}">
    <isif condition="${empty(pdict.CurrentHttpParameterMap.visacheckout.value) || pdict.CurrentHttpParameterMap.visacheckout.value}">
        <isinclude url="${URLUtils.url('CYBVisaCheckout-Button','buttonsource','minicart')}" />
    <iselse>
        <isinclude url="${URLUtils.url('CYBVisaCheckout-Button')}" />
    </isif>
</isif>
<!-- END Visa Checkout code -->

<a class="mini-cart-link-checkout" href="${URLUtils.https('COCustomer-Start')}" title="${Resource.msg('minicart.directcheckout','checkout',null)}"${Resource.msg('minicart.directcheckout','checkout',null)}&raquo;</a>
</div>
</div>
```

## footer\_UI.isml

### 1.) Include the template visacheckout/launch.isml at the end of the file.

```
<iscomment>Visa Checkout launch</iscomment>
<isinclude template="visacheckout/launch.isml" />
```

## header.isml

- 1.) In the header section replace mini-cart section with below snippet

```
<iscomment>INCLUDE: Mini-cart, do not cache</iscomment>
<div id="mini-cart">
    <isif condition="${!empty(pdict.CurrentHttpParameterMap.visacheckout.value) &&
pdict.CurrentHttpParameterMap.visacheckout.value}">
        <isinclude url="${URLUtils.url('Cart-
MiniCart','visacheckout',pdict.CurrentHttpParameterMap.visacheckout.value)}"/>
    <iselse>
        <isinclude url="${URLUtils.url('Cart-MiniCart')}" /></isif>
    </div>
```

## htmlhead.isml

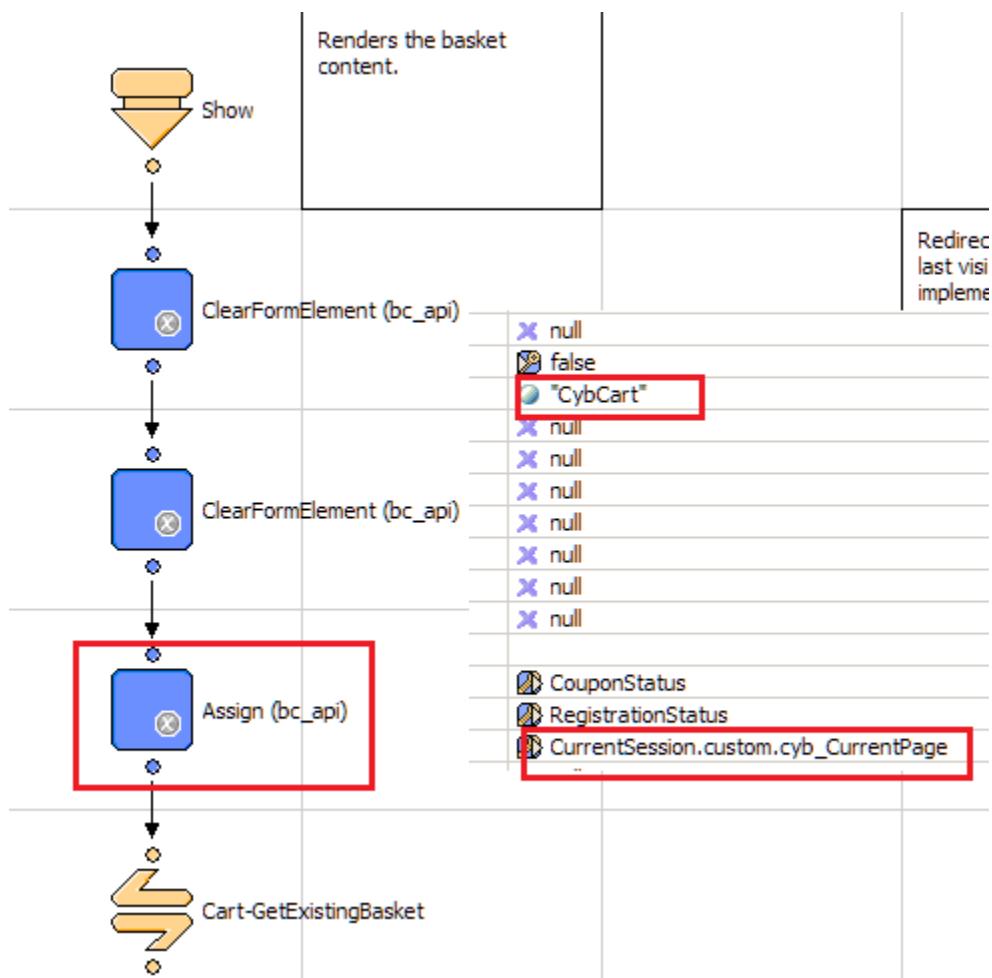
- 1.) Add following line to prevent visa checkout clickjacking in the end

```
<iscomment>Visa Checkout clickjacking prevention</iscomment>
<isinclude template="visacheckout/clickjackingPrevent.isml" />
```

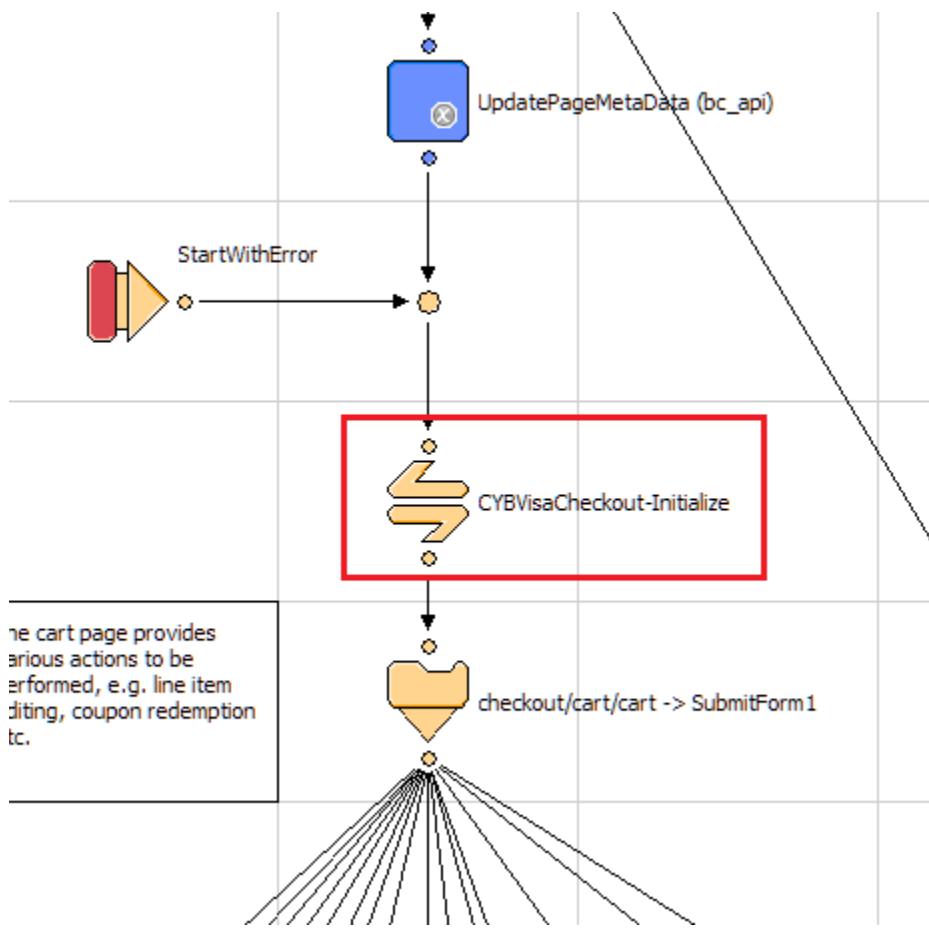
## Pipeline – Cart.xml

### Update Show node

- 1.) Add a property for visa checkout button just above Cart-GetExistingBasket call node and set the value as below:  
 Input: "CybCart"  
 Output: CurrentSession.custom.cyb\_CurrentPage



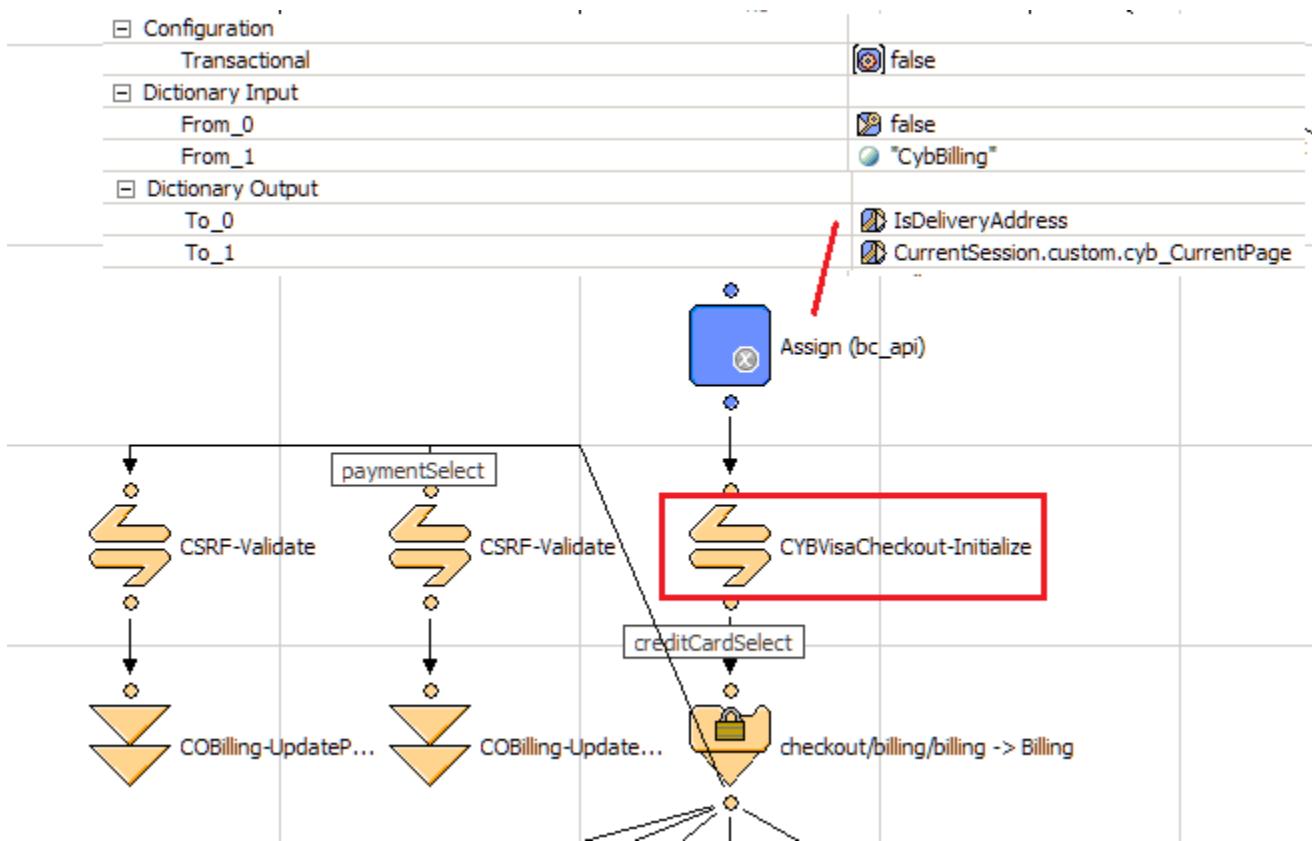
2.) Add call node **CYBVisaCheckout-Initialize** just before interaction continue node of cart.isml.



## Pipeline – COBilling.xml

### Update the Start Node

- 1.) Add an assign node above interaction continue node checkout/billing/billing having property  
 Input: false  
 Output: IsDeliveryAddress  
 For visa checkout button:  
 Input: "CybBilling"  
 Output: CurrentSession.custom.cyb\_CurrentPage
- 2.) Add the call node **CYBVisaCheckout -Initialize** in the Start node of COBilling.xml pipeline.  
 This call node is placed just above the interaction continuous node having template as  
 Template      checkout/billing/billing



## Secure Acceptance

### Generic Section

JS file – billing.js [compiled to app.js]

Update “exports.init” function

Add below code snippet after \$('#creditCardList').on('change', function () {

[Note: Below changes are covered in custom code > Generic section > billing.js, defined here for reference only]

```
// Secure Acceptance Redirect or iframe payment method : on selection change of saved credit card
// select credit card from list
$('#creditCardList').on('change', function () {
    var cardUUID = $(this).val();
    if (!cardUUID) {$('.checkoutForm').find('input[name$="_selectedCardID"]').val(""); return;}
    populateCreditCardForm(cardUUID, selectedPaymentMethod);

    // remove server side error
    $('.required.error').removeClass('error');
```

```

$('.error-message').remove();
});

$('.creditCardList').on('change', function () {
    var cardUUID = $(this).val();
    if (!cardUUID) {return;}

    var selectedPaymentMethod = $selectPaymentMethod.find(':checked').val();
    populateCreditCardForm(cardUUID,selectedPaymentMethod);

    // remove server side error
    $('.required.error').removeClass('error');
    $('.error-message').remove();
});

```

#### Update “populateCreditCardForm” function

```

function populateCreditCardForm(cardID,selectedPaymentMethod) {
    // load card details
    var url = util.appendParamToURL(Urls.billingSelectCC, 'creditCardUUID', cardID);
    ajax.getJson({
        url: url,
        callback: function (data) {
            if (!data) {
                window.alert(Resources.CC_LOAD_ERROR);
                return false;
            }
            switch (selectedPaymentMethod) {
                case "SA_REDIRECT":
                    $('.payment-method-expanded .saCCToken .field-wrapper').val(data.selectedCardID);
                    $('#dwfrm_billing_paymentMethods_creditCard_selectedCardID').val(data.selectedCardID);
                    break;
                case "SA_IFRAME":
                    $('.payment-method-expanded .saiframeCCToken .field-wrapper').val(data.selectedCardID);
                    $('#dwfrm_billing_paymentMethods_creditCard_selectedCardID').val(data.selectedCardID);
                    break;
                case "CREDIT_CARD":
                    setCCFields(data);
                    break;
                default:
                    setCCFields(data);
            }
        }
    });
}

```

```

    }
});
}
}
```

**Template – Cart.isml**

Add below error condition just after cart-banner slot

```

<isslot id="cart-banner" description="Banner for Cart page" context="global" />
<isif condition="${pdict.CurrentHttpParameterMap.SecureAcceptanceError != null &&
!empty(pdict.CurrentHttpParameterMap.SecureAcceptanceError.stringValue)}">
    <div class="error-form">${Resource.msg('sa.cart.payment.error.declined','cybersource',null)}</div>
</isif>
```

**Template – Summary.isml**

Replace the PlaceOrderError section with below code

Please refer to the changes mentioned under custom code – generic section- > summary.isml

**Template – Billing.isml**

Add below error condition just after checkout progress indicator

```

<isif condition="${!pdict.CurrentForms.multishipping.entered.value}">
    <isccheckoutprogressindicator step="2" multishipping="false" rendershipping ="${pdict.Basket.productLineItems.size() == 0 ? 'false' : 'true'}"/>
    <iselse/>
        <isccheckoutprogressindicator step="3" multishipping="true" rendershipping ="${pdict.Basket.productLineItems.size() == 0 ? 'false' : 'true'}"/>
    </isif>

    <isif condition="${pdict.CurrentHttpParameterMap.SecureAcceptanceError != null &&
!empty(pdict.CurrentHttpParameterMap.SecureAcceptanceError.stringValue)}">
        <div class="error-form">${Resource.msg('sa.billing.payment.error.declined','cybersource',null)}</div>
    </isif>

    <form action ="${URLUtils.continueURL()}" method="post"
    id ="${pdict.CurrentForms.billing.htmlName}" class="checkout-billing address form-horizontal">
```

**Template – paymentmethods.isml**

Add below code snippet to handle secure acceptance error after closing on </legend> tag

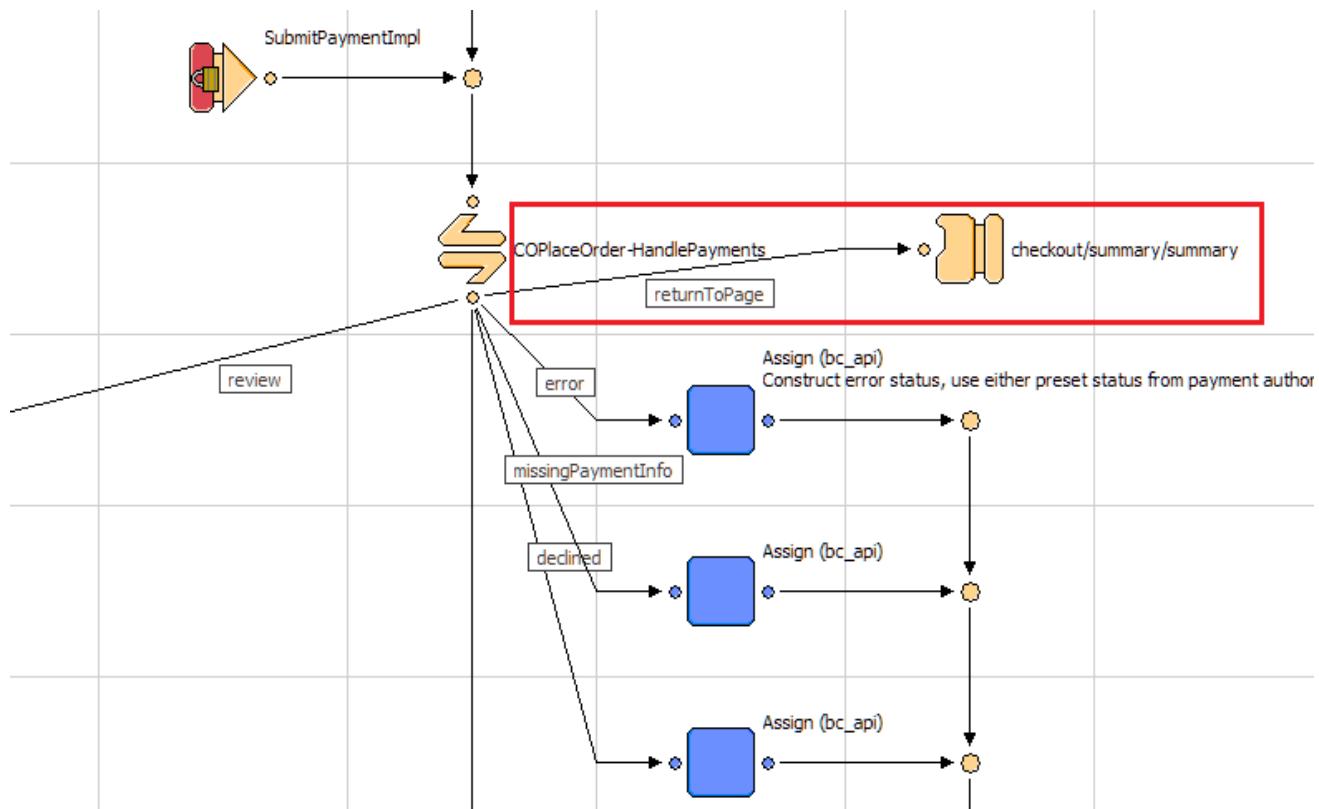
Changes are already covered under custom code > generic section-> paymentmethods.isml

**Secure Acceptance Redirect Section**

All secure acceptance redirect implementation changes will be inside int\_cybersource and int\_cybersource\_pipelines cartridge

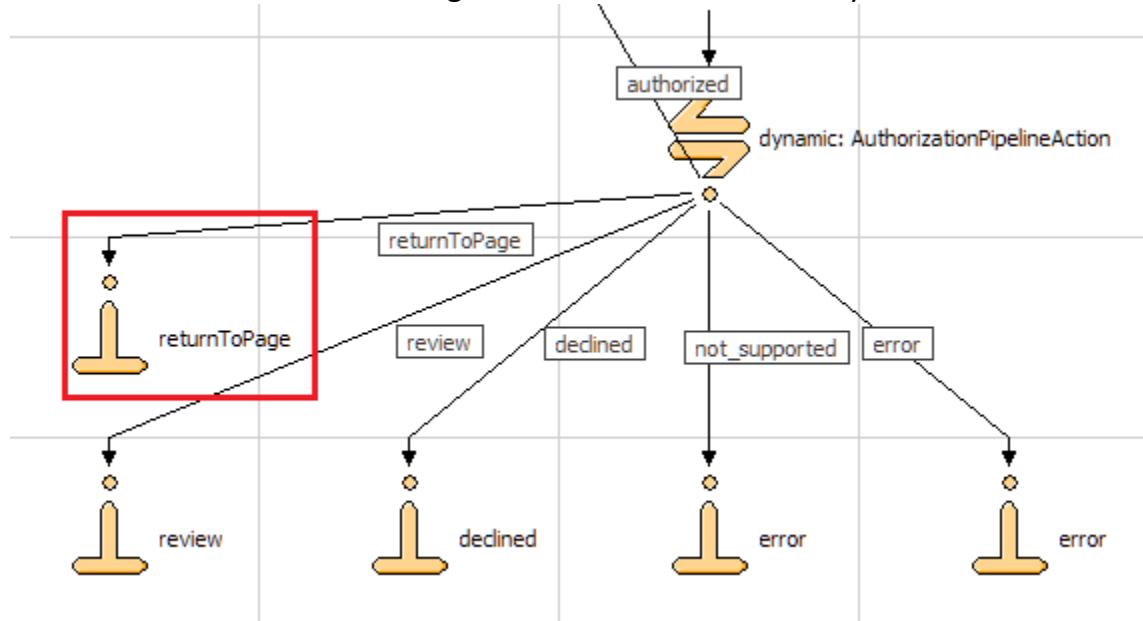
**Secure Acceptance Iframe Section****Pipeline - COPlaceOrder.xml****Update “Start” node**

**Add a new transition “returnToPage” in COPlaceOrder-HandlePayments inside COPlaceOrder-Start Node and call the interaction node checkout/summary/summary to render Iframe from Summary page**



**Update "HandlePayments" node**

**Add a new transition "returnToPage" in COPlaceOrder-HandlePayments**



**Pipeline - COSummary.xml**

**Create new "SubmitOrder" node**

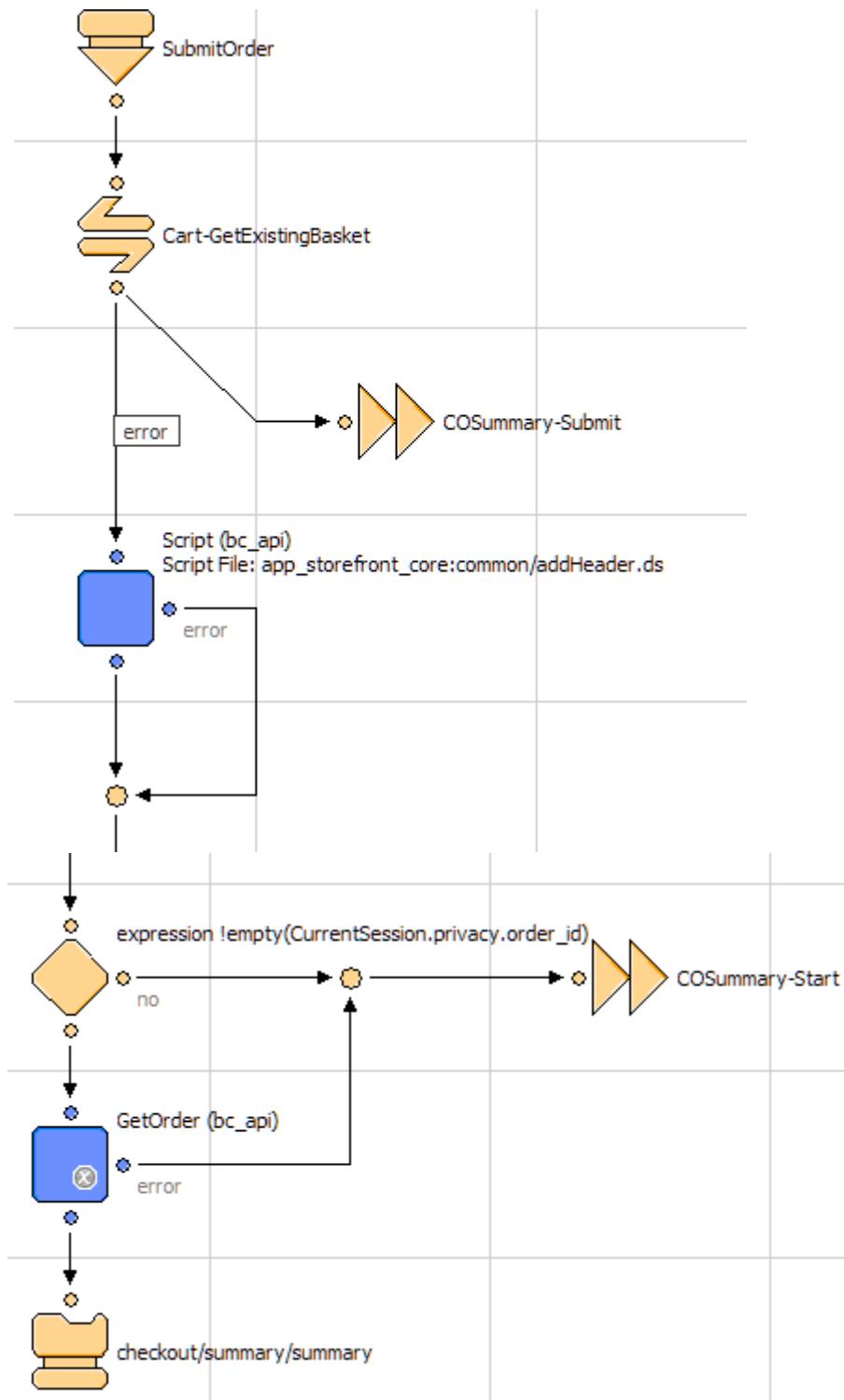
1. Create an new Public and secured node as "SubmitOrder"
2. Create a new .ds file "addHeader.ds" at location :

app\_storefront\_core/cartridge/scripts/common as below:

```
/**  
 * addHeader.ds  
 * //set the response header (X-FRAME-OPTIONS) to prevent clickjacking in Iframe  
 */  
importPackage( dw.system );  
  
function execute( args : PipelineDictionary ) : Number  
{  
  
    response.addHttpHeader("X-FRAME-OPTIONS", "SAMEORIGIN");  
  
    return PIPELET_NEXT;  
}
```

3. Add this script file in script node
4. Add a call node Cart-GetExistingBasket
5. Jump to COSummary-Submit if cart is fetched
6. If ERROR, add a decision node to check if order\_id is not empty:  
!empty(CurrentSession.privacy.order\_id)
7. If not empty, call GetOrder pipelet with the input as CurrentSession.privacy.order\_id and set Order in output
8. If error fetching Order, jump to COSummary-Start

Please find below image for the same:



## Template changes

### Update "summary.isml"

Secure acceptance Iframe related changes are done in summary.isml

Please refer to the changes mentioned under custom code – generic section- > summary.isml

### Update "miniBillingInfo.isml"

- Replace the line

```
<isset name="billingAddress" value="${pdict.Basket.billingAddress}" scope="page"/>
<isset name="paymentInstruments" value="${pdict.Basket.paymentInstruments}" scope="page"/> with the code below
```

```
<isif condition="${!empty(pdict.Basket)}">
<isset name="LineCtnr" value="${pdict.Basket}" scope="page"/>
<isset name="billingAddress" value="${LineCtnr.billingAddress}" scope="page"/>
<isset name="paymentInstruments" value="${LineCtnr.paymentInstruments}" scope="page"/>
<iselseif condition="${!empty(pdict.Order)}">
<isset name="LineCtnr" value="${pdict.Order}" scope="page"/>
<isset name="billingAddress" value="${pdict.Order.billingAddress}" scope="page"/>
<isset name="paymentInstruments" value="${pdict.Order.paymentInstruments}" scope="page"/>
</isif>
<isif condition="${!empty(billingAddress)}">
```

- Replace <a tag in billingAddress if condition with the line below

```
<div class="mini-billing-address order-component-block">

<h3 class="section-header">
<isif condition="${!empty(pdict.Basket)}"><a href="${URLUtils.https('COBilling-Start')}">
${Resource.msg('global.edit','locale',null)}</a></isif>
${Resource.msg('minibillinginfo.billingaddress','checkout',null)}
</h3>

<div class="details">
<isminicheckout_address p_address="${billingAddress}"/>
</div>

</div>
```

- Replace <a tag in paymentInstruments if condition with the line below

```
<isloop items="${paymentInstruments}" var="paymentInstr" status="loopstate">
<div class="mini-payment-instrument order-component-block <isif condition="${loopstate.first}"> first <iselseif
condition="${loopstate.last}"> last</isif>>
<h3 class="section-header">
<isif condition="${!empty(pdict.Basket)}"><a href="${URLUtils.https('COBilling-
Start')}">
${Resource.msg('global.edit','locale',null)}</a></isif>
<isif condition="${loopstate.first}"><span>
${Resource.msg('minibillinginfo.paymentmethod','checkout',null)}</span></isif>
</h3>
```

### Update "miniSummary.isml"

- Add below code snippet just above this line <isif condition="\${!empty(pdict.checkoutstep)}">

```

<isif condition="${!empty(pdct.Basket)}">
<isset name="lineCtnr" value="${pdct.Basket}" scope="page"/>
<iselseif condition="${!empty(pdct.Order)}">
<isset name="lineCtnr" value="${pdct.Order}" scope="page"/>
</isif>

<isif condition="${!empty(pdct.checkoutstep)}">

```

- Replace the line with below line <isif condition="\${checkoutstep <= 5}">

```
<isif condition="${checkoutstep <= 6}">
```

- Replace pdct.Basket with lineCtnr at below places

```

<isif condition="${lineCtnr.productLineItems.size() == 0
&& lineCtnr.giftCertificateLineItems.size() == 1}">
<isset name="editUrl" value="${URLUtils.url('GiftCert-Edit','GiftCertificateLineItemID',
lineCtnr.giftCertificateLineItems[0].UUID)}" scope="page"/>
</isif>

```

- Replace the line with below \${Resource.msg('summary.title','checkout',null)} <a class="section-header-note" href="\${editUrl}">\${Resource.msg('global.edit','locale',null)}</a>

```

${Resource.msg('summary.title','checkout',null)} <isif condition="${!empty(pdct.Basket)}"><a
class="section-header-note"
href="${editUrl}">${Resource.msg('global.edit','locale',null)}</a></isif>

```

- Update the DIV "checkout-mini-cart" with below code

```

<div class="checkout-mini-cart">
<isif condition="${checkoutstep != 5 && checkoutstep != 6}">
<isminilineitems p_lineitemctnr="${lineCtnr}">
</isif>
</div>

```

- Update the DIV "checkout-order-totals" with below code

```

<div class="checkout-order-totals">
<isif condition="${checkoutstep == 6}">
<isordertotals p_lineitemctnr="${lineCtnr}" p_showshipmentinfo="${true}"
p_shipmenteditable="${false}" p_totallabel="${Resource.msg('global.ordertotal','locale',null)}"/>
<iselseif condition="${checkoutstep > 3}">
<isordertotals p_lineitemctnr="${lineCtnr}" p_showshipmentinfo="${true}"
p_shipmenteditable="${true}" p_totallabel="${Resource.msg('global.ordertotal','locale',null)}"/>
<iselse/>
<isordertotals p_lineitemctnr="${lineCtnr}" p_showshipmentinfo="${false}"
p_shipmenteditable="${false}"
p_totallabel="${Resource.msg('global.estimatedtotal','locale',null)}"/>
</isif>
</div>

```

#### Update "minshipments.isml"

- Replace this line <isset name="Shipments" value="\${pdct.Basket.shipments}" scope="page"/>

with below code snippet

```
<isif condition="${!empty(pdct.Basket)}">
<isset name="lineCtnr" value="${pdct.Basket}" scope="page"/>
<isset name="Shipments" value="${lineCtnr.shipments}" scope="page"/>
<iselseif condition="${!empty(pdct.Order)}">
<isset name="lineCtnr" value="${pdct.Order}" scope="page"/>
<isset name="Shipments" value="${pdct.Order.shipments}" scope="page"/>
</isif>
```

- Replace pdct.Basket with lineCtnr at below places

```
<isif condition="${shipment.productLineItems.length <= 0 || shipment.custom.shipmentType == null && shipment.UUID==lineCtnr.defaultShipment.UUID && !empty(shipment.shippingAddress) && empty(shipment.shippingAddress.address1)}">
<isif condition="${Shipments.size() > 1 && lineCtnr.productLineItems.size() > 0}"><div class="name">${Resource.msgf('multishippingshipments.shipment','checkout',null, shipmentCount)}</div></isif>
```

- Replace the line with below <a href="\${editUrl}" class="section-header-note">\${Resource.msg('global.edit','locale',null)}</a> twice in a file

```
<iselseif condition="${shipment.custom.shipmentType == 'instore'}"/>
<isset name="editUrl" value="${URLUtils.https('Cart-Show')}" scope="page"/>
<isif condition="${!empty(pdct.Basket)}"><a href="${editUrl}" class="section-header-note">${Resource.msg('global.edit','locale',null)}</a></isif>
${Resource.msg('cart.store.instorepickup','checkout',null)}
<iselseif condition="${shipment.shippingAddress != null && lineCtnr.productLineItems.size() > 0}">
<isif condition="${!empty(pdct.Basket)}"><a href="${editUrl}" class="section-header-note">${Resource.msg('global.edit','locale',null)}</a></isif>
${Resource.msg('minishipments.shippingaddress','checkout',null)}
</isif>
```

- Replace pdct.Basket with lineCtnr at below line

```
<iselseif condition="${shipment.shippingAddress != null && lineCtnr.productLineItems.size() > 0}">
```

#### Update "ReportCheckout.isml"

- Add a condition after this <isset name="checkoutname" value="\${pdct.checkoutname}" scope="page"/> with below code snippet

```
<isset name="LineCntr" value="${pdct.Basket}" scope="page"/>
<isif condition="${!empty(pdct.Basket)}">
<isset name="LineCntr" value="${pdct.Basket}" scope="page"/>
<iselseif condition="${!empty(pdct.Order)}">
<isset name="LineCntr" value="${pdct.Order}" scope="page"/>
</isif>
```

- Replace pdct.Basket with LineCntr twice in file along with null check

```
'BasketID', null != LineCntr ? LineCntr.UUID:null,
```

**Core - scss changes****Update “\_checkout.scss”**

Add below code snippet at the end of file

```
.SecureAcceptance_IFRAME iframe{
    height:600px !important;
}

@media screen and ( max-width:1024px ){
    .SecureAcceptance_IFRAME iframe{
        height:650px !important;
    }
}

@media screen and ( max-width:767px ){
    .SecureAcceptance_IFRAME iframe{
        height:670px !important;
    }
}
```

**Secure Acceptance Silent Post Section****Template - billing.isml**

Add a a div for secure acceptance silent post after the end of </form> tag

```
</form>
<div id="secureAcceptancePost">
</div>
```

Add a “secureacceptance” class inside button and specify type as “button” as below

```
<div class="form-row form-row-button">
    <button class="button-fancy-large secureacceptance continue-place-order" type="button"
name="${pdict.CurrentForms.billing.save.htmlName}"
value="${Resource.msg('global.continueplaceorder','locale',null)}><span>${Resource.msg('global.continueplaceorder','I
ocale',null)}</span></button>
</div>
```

**Core – footer\_UI.isml**

Include script jquery.payment.js of cybersource cartridge

```
<script src="${URLUtils.staticURL('/lib/jquery/jquery.validate.min.js')}" type="text/javascript"></script>
<script src="${URLUtils.staticURL('/lib/jquery/jquery.payment.js')}" type="text/javascript"></script>
```

**Core – Resource.ds**

Add two new Resource in ResourceHelper.getResources

TLS_WARNING	: Resource.msg('global.browserToolsCheck.tls', 'locale', null),
INVALID_SERVICE	: Resource.msg('checkout.getSignature.service.problem', 'cybersource', null),
	INVALID_CREDITCARD :
	Resource.msg('checkout.invalid.credit.card.info', 'cybersource', null),

- Add below line under ResourceHelper.getUrls

```
paypalcallback : URLUtils.https('CYBPaypal-SessionCallback').toString(),
billingagreement : URLUtils.https('CYBPaypal-BillingAgreement').toString(),
orderreview : URLUtils.https('COSummary-Start').toString(),
silentpost : URLUtils.https('CYBSecureAcceptance-GetRequestDataForSilentPost').toString(),
```

## Core - billing.js

### Create new “secureacceptance” on Click function

Create a new secure acceptance silent post function to handle credit card information using Ajax call above this function \$couponCode.on('keydown', function (e) {

```
$('.secureacceptance').on('click', function (e) {
    var $selectPaymentMethod = $('.payment-method-options');
    var selectedPaymentMethod = $selectPaymentMethod.find(':checked').val();
    if ('SA_SILENTPOST' == selectedPaymentMethod) {
        var $checkoutForm = $('.checkout-billing');
        var ccnumber = $($checkoutForm).find('input[name$="_creditCard_number"]').val();
        var cvn = $($checkoutForm).find('input[name$="_creditCard_cvn"]').val();
        var month = $('.payment-method-expanded .month select').val();
        var expyear = $('.payment-method-expanded .year select').val();
        var dwctype = $('.payment-method-expanded .cctype select').val();
        var savecc = $($checkoutForm).find('input[name$="_creditCard_saveCard"]').is(':checked');
        var customerEmail = $('#dwfrm_billing_billingAddress_email_emailAddress').val();
        var cardmap = {'Visa': '001', 'Amex': '003', 'MasterCard': '002', 'Discover': '004', 'Maestro': '042'};
        if(month.length == 1) {
            month = "0"+month;
        }
        var ctype = cardmap[dwctype];
        var firstname =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(firstName")].val());
        var lastname =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(lastName")].val());
        var address1 =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(address1")].val());
        var address2 =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(address2")].val());
        var city =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(city")].val());
        var zipcode =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(postal")].val());
        var country =
encodeFieldValue($($checkoutForm).find('select[name$="_addressFields(country")].val());
        var state = $($checkoutForm).find('select[name$="_addressFields(states_state")].val();
        if (state==undefined) {
            state = $($checkoutForm).find('input[name$="_addressFields(states_state")].val();
        }
        state = encodeFieldValue(state);
        var phoneno =
encodeFieldValue($($checkoutForm).find('input[name$="_addressFields(phone")].val());
        var cctoken = encodeFieldValue($('data-
method="CREDIT_CARD").find('[name$="creditCard_selectedCardID"]').val());
```

```

var validCardType = dwcctype.toLowerCase();
var validCardNumber = $.payment.validateCardNumber(ccnumber);
var validCardCvv= $.payment.validateCardCVC(cvv,validCardType);
var validCardExp = $.payment.validateCardExpiry(month, expyear);

if(cctoken) {
    validCardNumber = true;
}

$(checkoutForm).find('input[name$=_creditCard_number"]').val("");
$(checkoutForm).find('input[name$=_creditCard_cvv"]').val("");
$(checkoutForm).find('input[name$=_creditCard_expiration_month"]').val("");
$(checkoutForm).find('input[name$=_creditCard_expiration_year"]').val("");
$(checkoutForm).find('input[name$=_creditCard_type"]').val("");

if(validCardCvv && validCardExp && validCardNumber) {
    var data = {
        custemail : customerEmail,
        savecc : savecc,
        firstname : firstname,
        lastname : lastname,
        address1 : address1,
        address2 : address2,
        city : city,
        zipcode : zipcode,
        country : country,
        state : state,
        phone : phoneno,
        cctoken : cctoken,
        format : 'ajax'
    };
    $.ajax({
        url:Urls.silentpost,
        type: "POST",
        data: data,
        success: function(xhr,data) {
            if(xhr) {
                if(xhr.error == true) {
                    $("#saspCardError").html(xhr.errorMsg);
                    $("#saspCardError").addClass('error');
                }
                else {
                    $("#secureAcceptancePost").html(xhr);
                    $("#card_expiry_date").val(month + '-' + expyear);
                    $("#card_type").val(cctype);
                }
            }
        }
    });
}

```

```

$( "#card_cvn" ).val(cvn); }

if(cctoken == null ||

cctoken == "") {

    $('#silentPostFetchToken').append('<input type="hidden" id="card_number" name="card_number" />');

    $('#card_number').val(ccnumber);

}

$('#silentPostFetchToken').submit();

}

}

else {

    $('#saspCardError').html(Resources.INVALID_SERVICE);
    $('#saspCardError').addClass('error');

}

};

error: function () {

}

$('#saspCardError').html(Resources.INVALID_SERVICE).addClass('error');

}

};

else{

    $('#saspCardError').html(Resources.INVALID_CREDITCARD);
    $('#saspCardError').addClass('error');

    return false;

}

};

else{

    $('.secureacceptance').prop("type", "submit").submit();

    return true;

}

});

```

#### Create new “encodeRequestFieldValue” function

Create a new function to encode input field value below setCCFields :

```

/**
 * @function
 * @description function to convert html tag to lt or gt;
 * @param {fieldValue} value of the field
 */
function encodeRequestFieldValue(fieldValue) {

    return fieldValue.replace(/</g, "&lt;").replace(/>/g, "&gt;")
}

```

#### Update “updatePaymentMethod” function

[Note: Below changes are covered in custom code > Generic section > billing.js, defined here for reference only]

Update the function:

```

function updatePaymentMethod(paymentMethodID) {
    var $paymentMethods = $('.payment-method');
    $paymentMethods.removeClass('payment-method-expanded');
    var dataMethod = paymentMethodID;
    if (paymentMethodID=='SA_SILENTPOST') {
        dataMethod = 'CREDIT_CARD';
    }
    var $selectedPaymentMethod = $paymentMethods.filter('[data-method=' + dataMethod + "']");
    if ($selectedPaymentMethod.length === 0) {
        $selectedPaymentMethod = $('[data-method="Custom"]');
    }
    if (paymentMethodID=="VISA_CHECKOUT") {
        $(".continue-place-order").hide();
        $(".visacheckoutbutton").show();
    }
    else if (paymentMethodID=="PAYPAL" || paymentMethodID=="PAYPAL_CREDIT") {
        $("#billingAgreementCheckbox").attr('checked',false);
        $(".continue-place-order").hide();
    }
    else {
        $(".continue-place-order").show();
        $(".visacheckoutbutton").hide();
    }
    if (paymentMethodID=="CREDIT_CARD" || paymentMethodID=="SA_SILENTPOST") {
        $(".spsavecard").show();
    } else if ((paymentMethodID=="SA_REDIRECT" || paymentMethodID=="SA_IFRAME") &&
SitePreferences.TOKENIZATION_ENABLED) {
        $(".spsavecard").show();
    }
    else {
        $(".spsavecard").hide();
    }
}

$selectedPaymentMethod.addClass('payment-method-expanded');

// ensure checkbox of payment method is checked
$('input[name$="_selectedPaymentMethod"]').removeAttr('checked');
$('input[value=' + paymentMethodID + ']').prop('checked', 'checked');

formPrepare.validateForm();
}

```

# Payer Authentication

## Pipeline –COSummary.xml

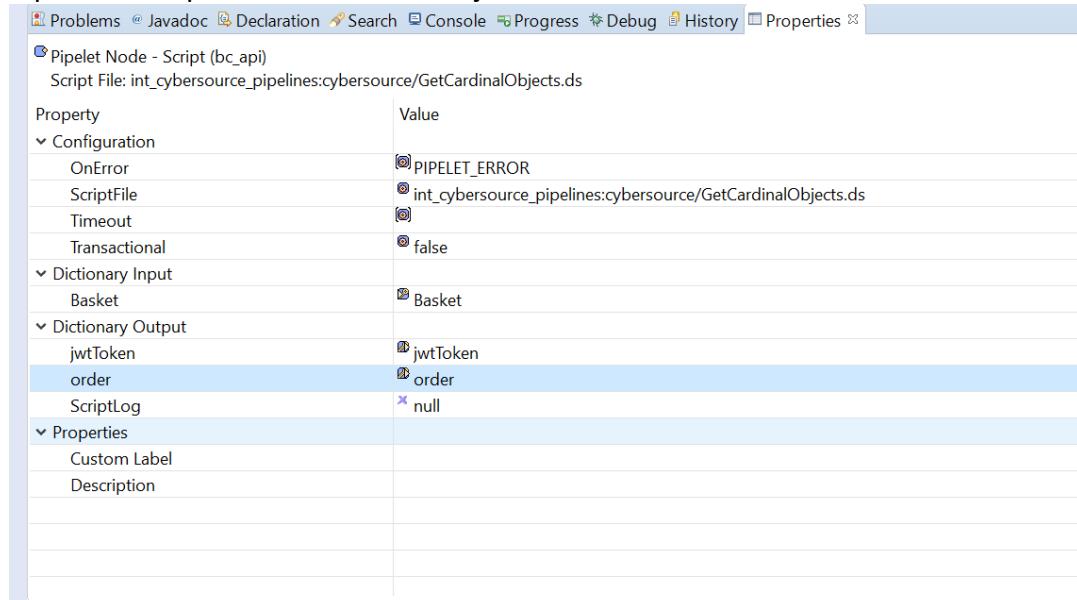
### Update Start Node

1. Add assign node after the call to CalculatePaymentTransactionTotals.ds and before the pipelet UpdatePageMetaData. Assign the following values:

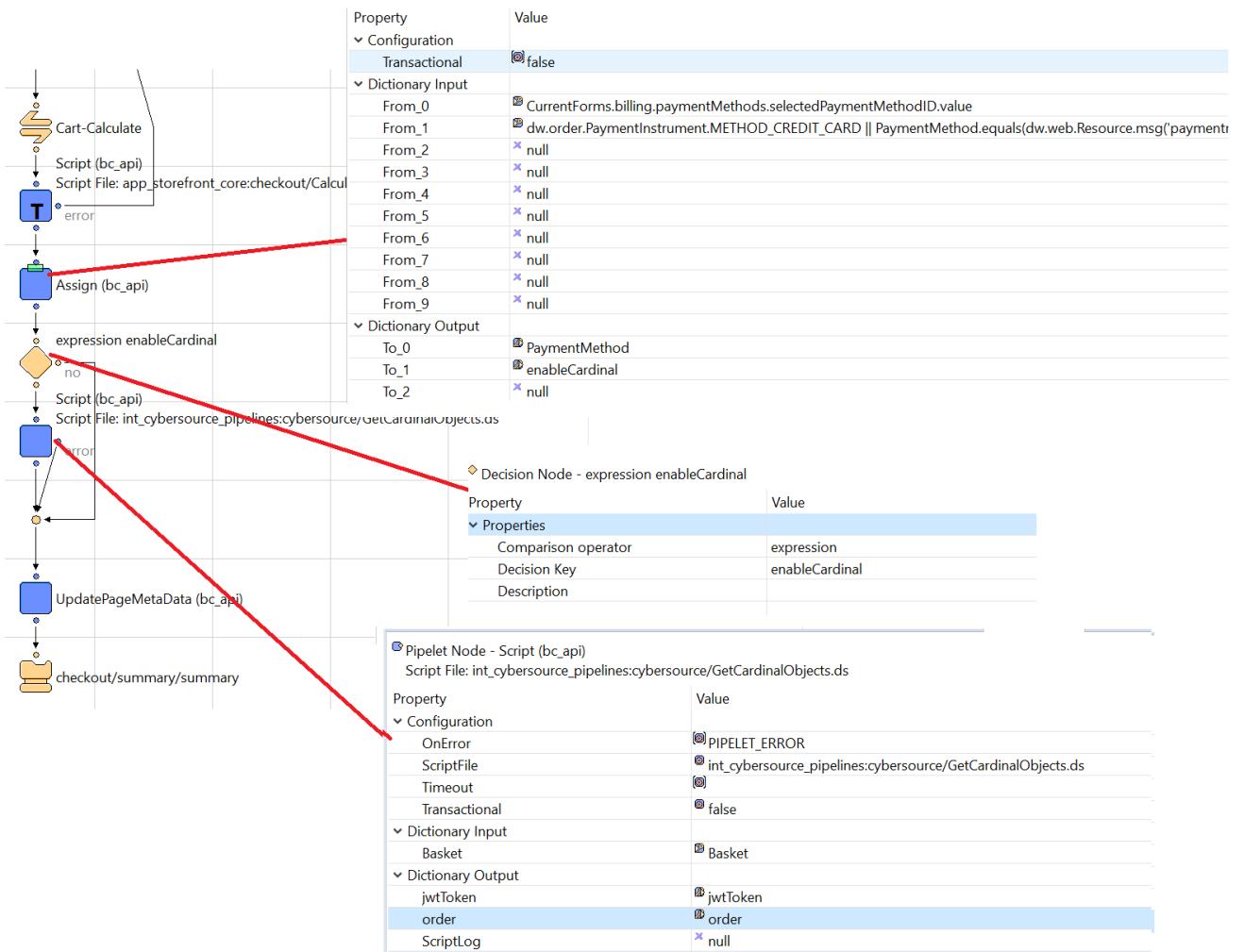
FROM	TO
CurrentForms.billing.paymentMethods.selectedPaymentMethodID.value	PaymentMethod
dw.order.PaymentInstrument.METHOD_CREDIT_CARD    PaymentMethod.equals(dw.web.Resource.msg('paymentmethodname.SA_IFRAME','cybersource',null))    PaymentMethod.equals(dw.web.Resource.msg('paymentmethodname.SA_REDIRECT','cybersource',null))    PaymentMethod.equals(dw.web.Resource.msg('paymentmethodname.SA_SILENTPOST','cybersource',null))	enableCardinal

2. Add decision node with condition **enableCardinal**, if true add a script node for ScriptFile int\_cybersource\_pipelines:cybersource/GetCardinalObjects.ds to generate a JWT token and order String

### Input and output for GetCardinalObject.ds



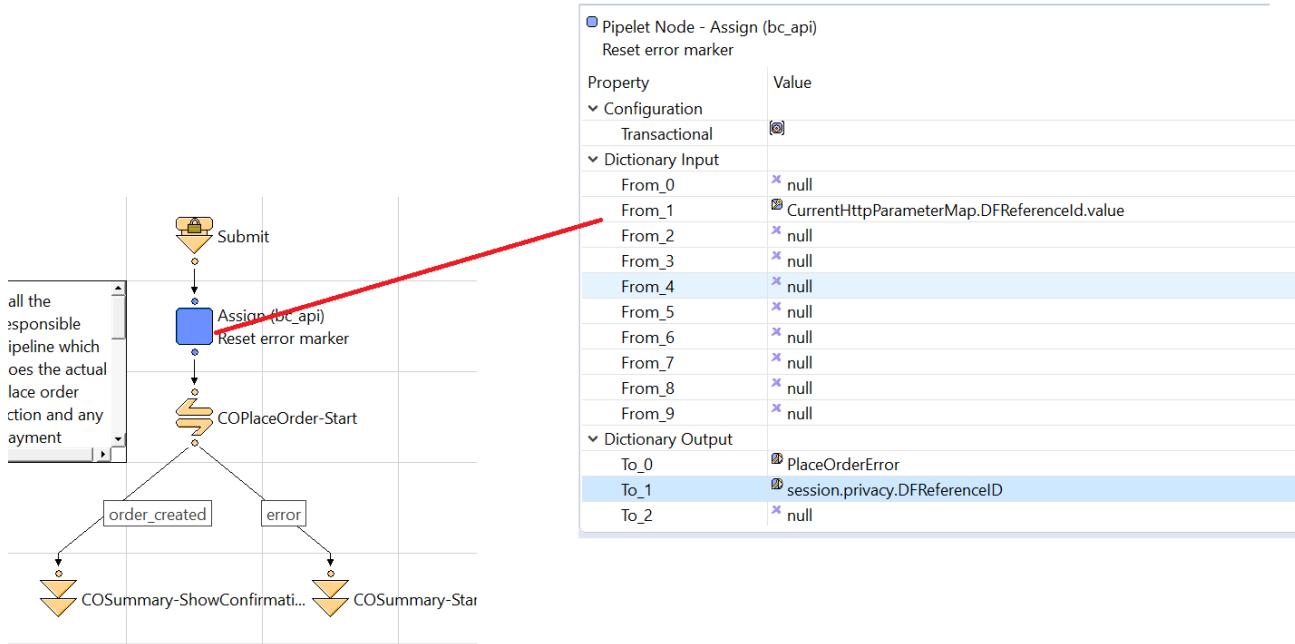
If false, connect to the join node after GetCardinalObjects.ds  
All changes for reference



## Update Submit Node

Update the assign node before COPlaceOrder-Start and set the value

CurrentHttpParameterMap.DFReferenceId.value to session.privacy.DFReferenceID



## Template – summary.isml

Insert the following lines to include songbird.isml to initialize the cardinal script

```
<isinclude template="util/modules"/>
<isif condition="${pdict.enableCardinal}">
    <isinclude template="cardinal/songbird"/>
</isif>
```

Insert a hidden parameter just after CSRFProtection field within form

```
<input type="hidden"
name="${dw.web.CSRFProtection.getTokenName()}"
value="${dw.web.CSRFProtection.generateToken()}" />
<input type="hidden" name="DFReferenceId" id="DFReferenceId"
value="" />
```

## Device Fingerprint

The device fingerprint enables CyberSource to detect fraud/spam more efficient.

The device fingerprint can be used as an addition of the Credit Card Payment, it is not an independent service.

## How does it work?

During/before checkout three (invisible) ‘beacons’ at the checkout page (a JavaScript, an image and a flash object) would collect and transmit several client-specific parameters to CyberSource partner.

Those beacons contain the session Id.

With the Credit Card Payment, this session Id is transmitted again and CyberSource is able to combine the data for advanced fraud detection.

## Setup:

(Prerequisites: CyberSource cartridge is already installed).

1. Enable the device fingerprint at the Site Preferences of CyberSource and set the Organization ID (provided by CyberSource). The Merchant ID should be set already, anyway.
2. Include following snippet i.e. at **billing.isml** and **summary.isml** page (Recommended: at bottom of page to have no visual impacts)

[Note: summary .isml device fingerprint changes are covered in custom code-generic section-summary.isml]

```
<script>window.Countries = <isprint value="${json}" encoding="off"/></script>
<isif condition="${dw.system.Site.getCurrent().getCustomPreferenceValue('CsDeviceFingerprintEnabled')}">
    <isinclude url="${URLUtils.url('CYBCredit-IncludeDigitalFingerprint')}"/>
</isif>
</isdecorate>
```

Do a checkout with Credit Card payment. After this checkout, at the CyberSource Business Manager you will see (at the Transaction Manager):

*Device Fingerprint: submitted*

## Hints for the CsDeviceFingerprintRedirectionType:

To get improved deviceFingerprint results, Cybersource recommends redirecting the included code (loading a image, a flash and a javascript) pointing to the CsJetmetrixLocation, to a local domain. There are three possible settings for this redirection: ‘none’, static’ and dynamic.

No redirection, the beacons will be loaded direct from the CsJetmetrixLocation (i.e. <https://h.online-metrix.net>)

*Static* The beacons are included with a137emandware pipeline call. The pipeline call will redirect to the CsJetmetrixLocation.

*Dynamic* If set to dynamic, you have to specify a mapping rule at SiteUrls->Static Mappings. All URLs matching the pattern will be redirected by the Demandware Server.

The screenshot shows the Demandware Business Manager interface in Mozilla Firefox. The title bar reads "Sandbox • BootBarn US • Demandware Business Manager - Mozilla Firefox". The address bar shows the URL "https://dev07.web.bootbarn.demandware.net/on/demandware.store/Sites-Site/default/ViewLi...". The left sidebar menu includes "SITES: (1) BootBarn US", "Site - BootBarn US" (with sub-options: Storefront, Products and Catalogs, Content, Search, Online Marketing, Customers, Custom Objects, Ordering, Analytics, Site URLs, Site Preferences), and "Administration" (with sub-options: Replication, Organization, Sites, Site Development, Global Preferences, Operations). The main content area is titled "Static Mappings" under "Static Mappings". It contains descriptive text about static mappings, dynamic pipeline calls, and static resources. Examples of mapping rules are provided, such as:

```

/jump/to/catalog          p,,,Link-Category,,cgid,K,name,K
http://www.mystore.com/show/my/image   s,,,,,/images/add_cart.gif
***/product-big-image.gif    s,,,,,/images/product_big_image.gif
http://www.oldstore.com/my/old/category/***
***/catalog/shoes?**         p,,,Link-Category,,cgid,C,name,C
                             p,,,Link-Category,,cgid,S,name,S

```

# Mapping for Cybersource Device Fingerprint Service
~~/tp/\*\*\* p,,,Cybersource-RedirectFpLocation,,Location,{\_url}~~

Example for a matching mapping rule for the device fingerprint redirection

Make an Alias entry in Business manager to execute Device finger print with “ Dynamic” redirection Type

Go to Site > Site URLs > Aliases and add an Alias for your domain like below:

[Merchant Tools](#) > [Site URLs](#) > Aliases

## Aliases

This section is used to set hostname aliases for a site.

```
/*
 * Go to http://www.jsonlint.com/ to validate our file.
 */
/* 
 * __version must be set to "1"
 */

__version": "1",

/*
 * Settings section is used to configure main HTTP and HTTPS hostnames for a site.
 *
 */
"settings": {
    "http-host": "dev5.sitegen.com",
    "https-host": "dev5.sitegen.com",
    "site-path": "SiteGenesis"
},

/*
 * Host name definitions.
 * The following section allows to define additional hostnames associated with the site.
 * With each hostname it is possible to define set of redirect rules.
 *
 */
/*
 * Examples
 */
```

# Site Configuration

## Configure Payment Processor

### Steps to Create payment processor

Go to Site -> Ordering -> Payment Processors; add a new payment processor with ID and description as given in below table

Processor ID	Description
BASIC_CREDIT	Internal credit card handling with simple card number check only.
BASIC_GIFT_CERTIFICATE	Internal gift certificate handling.
CYBERSOURCE_ALIPAY	CYBERSOURCE_ALIPAY (test and production systems).
CYBERSOURCE_CREDIT	Cybersource online credit card authorization and visa checkout (test and production systems).
BANK_TRANSFER	Bank Transfer
Cybersource_AndroidPay	Cybersource_AndroidPay in app mobile payment
Cybersource_ApplePay	Cybersource_ApplePay in app mobile payment
KLARNA_CREDIT	Klarna
PAYPAL_CREDIT	PayPal online credit card authorization (test and production systems).
PAYPAL_EXPRESS	Pay Pal

[Payment Processors on Site genesis global]

## Payment Processors

The list shows all payment processors currently defined for this site. Click **New** to create a custom payment processor. Use the check boxes and then click **Delete** to delete payment processor.

<a href="#">Select All</a>	Processor ID	Description
<input type="checkbox"/>	<a href="#">BANK_TRANSFER</a>	Bank Transfer
<input type="checkbox"/>	<a href="#">BASIC_CREDIT</a>	Internal credit card handling with simple card number check only.
<input type="checkbox"/>	<a href="#">BASIC_GIFT_CERTIFICATE</a>	Internal gift certificate handling.
<input type="checkbox"/>	<a href="#">CYBERSOURCE_ALIPAY</a>	CYBERSOURCE_ALIPAY (test and production systems).
<input type="checkbox"/>	<a href="#">CYBERSOURCE_BML</a>	'Bill Me Later' online authorization through Cybersource (test and production systems).
<input type="checkbox"/>	<a href="#">CYBERSOURCE_CREDIT</a>	Cybersource online credit card authorization (test and production systems).
<input type="checkbox"/>	<a href="#">Cybersource_AndroidPay</a>	Cybersource_AndroidPay in app mobile payment
<input type="checkbox"/>	<a href="#">Cybersource_ApplePay</a>	Cybersource_ApplePay in app mobile payment
<input type="checkbox"/>	<a href="#">KLARNA_CREDIT</a>	Klarna Credit
<input type="checkbox"/>	<a href="#">PAYPAL_CREDIT</a>	Paypal online credit card authorization (test and production systems).

[Payment Processors on Site genesis]

## Payment Processors

The list shows all payment processors currently defined for this site. Click **New** to create a custom payment processor. Use the check boxes and then click **Delete** to delete payment processor.

<a href="#">Select All</a>	Processor ID	Description
<input type="checkbox"/>	<a href="#">BASIC_CREDIT</a>	Internal credit card handling with simple card number check only.
<input type="checkbox"/>	<a href="#">BASIC_GIFT_CERTIFICATE</a>	Internal gift certificate handling.
<input type="checkbox"/>	<a href="#">CYBERSOURCE_ALIPAY</a>	
<input type="checkbox"/>	<a href="#">CYBERSOURCE_BML</a>	'Bill Me Later' online authorization through Cybersource (test and production systems).
<input type="checkbox"/>	<a href="#">CYBERSOURCE_CREDIT</a>	Cybersource online credit card authorization (test and production systems).
<input type="checkbox"/>	<a href="#">KLARNA_CREDIT</a>	Klarna Widget Payment Processor
<input type="checkbox"/>	<a href="#">PAYPAL_CREDIT</a>	Paypal online credit card authorization (test and production systems).
<input type="checkbox"/>	<a href="#">PAYPAL_EXPRESS</a>	Paypal Express Checkout (test and production systems).
<input type="checkbox"/>	<a href="#">VERISIGN_CREDIT</a>	Verisign online credit card authorization (test and production systems).

## Import Meta Data

Import following site configuration meta-data through Business Manager:

To import the following site configuration Go to Administration -> Site Development -> Import & Export -> upload the below mentioned files and import the configuration.

- CyberSource-metadata.xml from /metadata/site\_genesis\_meta.zip – sets all the required meta configurations of system defined and custom defined
- CyberSource-Custom-Objecttype-Definition.xml from /metadata/site\_genesis\_meta.zip – sets all custom attributes for Cybersource

## Import Payment Methods

To import the following site payment methods Go to Site > Ordering > Import & Export-> upload the below mentioned file and import the configuration in to Payment Methods.

- CyberSource-PaymentMethods.xml from /metadata/site\_genesis\_meta.zip
- Merchant can enable/disable any of the payment method listed below:

Payment Method ID	Payment Method Name
ALIPAY	Alipay
BANCONTACT	BANCONTACT
CREDIT_CARD	Credit Card
DW_ANDROID_PAY	Android Pay
DW_APPLE_PAY	Apple Pay
EPS	EPS
GIROPAY	GIROPAY
IDEAL	IDEAL Bank Transfer
KLARNA	Klarna
PAYPAL	Pay Pal
PAYPAL_CREDIT	PayPal Credit
SA_IFRAME	Credit Card - Secure Acceptance Web/Mobile (Iframe)
SA_REDIRECT	Credit Card - Secure Acceptance Web/Mobile (Redirect)
SA_SILENTPOST	Credit Card - Secure Acceptance Silent Order POST
SOFORT	SOFORT
VISA_CHECKOUT	Visa Checkout

Payment Methods				
Payment methods are managed here. To create a new payment method, click the New button. To remove a payment method click the remove icon in the payment select the CREDIT_CARD payment method, credit/debit cards can be reordered through drag and drop.				
ID	Name	Enabled	Sort Order	
ALIPAY	Alipay	Yes	5	
CREDIT_CARD	Credit Card	Yes	4	
DW_ANDROID_PAY	Android Pay	Yes	12	
DW_APPLE_PAY	Apple Pay	Yes	7	
GIFT_CERTIFICATE	Gift Certificate	Yes	1	
KLARNA	Klarna	Yes	13	
PAYPAL	PAYPAL	Yes	6	
PAYPAL_CREDIT	Paypal Credit	Yes	14	
SA_IFRAME	Credit Card - Secure Acceptance Web/Mobile (Iframe)	Yes	11	
SA_REDIRECT	Credit Card - Secure Acceptance Web/Mobile (Redirect)	Yes	9	
SA_SILENTPOST	Credit Card - Secure Acceptance Silent Order POST	Yes	10	
VISA_CHECKOUT	Visa Checkout	Yes	8	

[Note:] Each APM defined above is tightly coupled with specific Merchant Id Configured in Custom preferences i.e. some APM are mapped with one merchant ID and some with others as per merchant need.

Thus to execute a particular APM on SFCC, merchant should ensure that the respective APM is mapped with correct Merchant ID and password.

## Configure Services

To import the following Service configuration Go to Administration > Operations > Import & Export-> upload the below mentioned file and import the configuration under services

- CyberSource-Services.xml from /metadata/site\_genesis\_meta.zip – add new Service for cybersource integration

After import above file ensure to update credentials as per cybersource merchant account appropriately in BM.

The following Business Manager Screenshot depicts the import / Export functionality:

[Administration](#) > [Operations](#) > Import & Export

## Import & Export

### Job Schedules

[Import](#) and [export](#) your job schedules.

### Services

[Import](#) and [export](#) your services.

### Import & Export Files

[Upload](#) and [download](#) your import and export files.

Administration > Operations > Services

[Services](#)   [Profiles](#)   [Credentials](#)

### Services

Select All	Name	Type	Profile	Credentials	Status
<input type="checkbox"/>	<a href="#">cybersource.conversiondetailreport</a>	HTTP	<a href="#">cybersourceprofile</a>	<a href="#">conversiondetailreport</a>	Live
<input type="checkbox"/>	<a href="#">cybersource.soap.transactionprocessor.bml</a>	SOAP	<a href="#">cybersourceprofile</a>	<a href="#">cybersourcegeneric</a>	Live
<input type="checkbox"/>	<a href="#">cybersource.soap.transactionprocessor.bmipromo</a>	SOAP	<a href="#">cybersourceprofile</a>	<a href="#">cybersourcegeneric</a>	Live
<input type="checkbox"/>	<a href="#">cybersource.soap.transactionprocessor.generic</a>	SOAP	<a href="#">cybersourceprofile</a>	<a href="#">cybersourcegeneric</a>	Live
<input type="checkbox"/>	<a href="#">cybersource.soap.transactionprocessor.pos</a>	SOAP	<a href="#">cybersourceprofile</a>	<a href="#">cybersourcegeneric</a>	Live

[New](#) [Delete](#)

- The below Cybersource Services created with single profile and credential
  - [Cybersource.soap.transactionprocessor.generic](#)
  - [Cybersource.soap.transactionprocessor.pos](#)
  - [Cybersource.conversiondetailreport](#)

The profile names `cybersourceprofile`, the merchant can create new profile if they require separate profile settings for each service stated above.

Similarly, merchant can create or update existing credential settings for each service stated above.

There is Cyber Source detailed report service created in DemandWare with below separate Credentials as follows:

- URL: Specify below report location along with the requested parameter ,the parameter values are replaced at runtime by the JOB code
  - Test environment URL is "<https://apitest.cybersource.com/reporting/v3/conversion-details>"
  - Production environment URL is " <https://api.cybersource.com/reporting/v3/conversion-details>"

- b. User: Merchant specific username [Represents user having report downloader role in cybersource console]
- c. Password: Merchant specific password
- Modify the merchant name, timeout details in profile. Also merchant can configure different profiles for different cybersource services depending on need of the project.  
Refer below:

[Administration](#) > [Operations](#) > [Services](#) > [cybersource.conversiondetailreport - Details](#)

## cybersource.conversiondetailreport

Fields with a red asterisk (\*) are mandatory. Click **Apply** to save the details. Click **Reset** to revert to the last saved state.

Name:*	<input type="text" value="cybersource.conversiondetailrep"/>
Type:	<input type="text" value="HTTP"/>
Enabled:	<input checked="" type="checkbox"/>
Service Mode:	<input type="text" value="Live"/>
Log Name Prefix:	<input type="text" value="cybersource"/>
Communication Log Enabled:	<input checked="" type="checkbox"/>
Profile:	<input type="text" value="cybersourceprofile"/>
Credentials:	<input type="text" value="conversiondetailreport"/>

[\*\*<< Back to List\*\*](#)

[Administration](#) > [Operations](#) > [Services](#) > cybersourceprofile - Details

## cybersourceprofile

Fields with a red asterisk (\*) are mandatory. Click **Apply** to save the details. Click **Reset** to revert to the last saved state.

This profile is used by 4 services.

<b>Name:</b> *	cybersourceprofile
<b>Timeout (ms):</b>	30,000
<b>Enable Circuit Breaker:</b>	<input type="checkbox"/>
<b>Max Circuit Breaker Calls:</b>	0
<b>Circuit Breaker Interval (ms):</b>	0
<b>Enable Rate Limit:</b>	<input type="checkbox"/>
<b>Max Rate Limit Calls:</b>	0
<b>Rate Limit Interval (ms):</b>	0

[Administration](#) > [Operations](#) > [Services](#) > ConversionDetailReport - Details

## ConversionDetailReport

Fields with a red asterisk (\*) are mandatory. Click **Apply** to save the details. Click **Reset** to revert to the last saved state.

These credentials are used by 1 service.

<b>Name:</b> *	ConversionDetailReport
<b>URL:</b>	https://apitest.cybersource.com/reporting/v3/conversionDetailReport
<b>User:</b>	*****
<b>Password:</b>	*****
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

[<< Back to List](#)

## Configure Site Preferences

### CyberSource Site Preference

Site Preferences Attribute

Site Preferences	Description
CyberSource Merchant Id(CsMerchantId)	CyberSource Merchant ID <b>Note:</b> Merchant Key is defined at site preference level due to its length which could not be stored at DW service level configurations.
CyberSource Merchant Key(CsSecurityKey)	CyberSource Security Key <b>Note:</b> Merchant Key is defined at site preference level due to its length which could not be stored at DW service level configurations.
CyberSourceEndpoint(CsEndpoint)	CyberSource Web service End points: Test <a href="https://ics2wstesta.ic3.com/commerce/1.x/transactionProcessor">https://ics2wstesta.ic3.com/commerce/1.x/transactionProcessor</a> <a href="https://ics2wsa.ic3.com/commerce/1.x/transactionProcessor">https://ics2wsa.ic3.com/commerce/1.x/transactionProcessor</a>
CyberSourceShipFromCity(CsShipFromCity)	Ship to data if fixed for the site
CyberSourceShipFromStateCode(CsShipFromStateCode)	Ship to data if fixed for the site
CyberSourceShipFromZipCode(CsShipFromZipCode)	Ship to data if fixed for the site
CyberSourceShipFromCountryCode(CsShipFromCountryCode)	Ship to data if fixed for the site
CyberSource Ignore AVS Result(CsAvsIgnoreResult)	AVS ignore results
CyberSource AVS Decline Flags(CsAvsDeclineFlags)	
CyberSource – On Delivery Address Verification Failure(CsDavOnAddressVerificationFailure)	
CyberSource – Enable Delivery Address Verification(CsDavEnable)	This will enable Delivery Address Verification, to help minimize risk of undeliverable or returns orders, because of user data entry errors.
CyberSource Merchant ID(PA)(CsPaMerchantId)	Payer Auth merchant ID
CyberSource Merchant Password(PA)(CsPaMerchantPassword)	Payer Auth Merchant Key
CyberSource Merchant Name(PA)(CsPaMerchantName)	Name
CyberSource Purchase Order Acceptance City(Tax)(CsPoaCity)	CyberSource purchase order acceptance data – used by Tax
CyberSource Purchase Order Acceptance State Code(Tax)(CsPoaStatusCode)	CyberSource purchase order acceptance data – used by Tax
CyberSource Purchase Order Acceptance Zip Code(Tax)(CsPoaZipCode)	CyberSource purchase order acceptance data – used by Tax

CyberSource Purchase Order Acceptance Country Code(Tax)(CsPoaCountryCode)	CyberSource purchase order acceptance data – used by Tax
CyberSource Purchase Order Origin City((Tax)CsPooCity)	CyberSource purchase order origin data – used by Tax
CyberSource Purchase Order Origin StateCode(Tax)(CsPooStateCode)	CyberSource purchase order origin data – used by Tax
CyberSource Purchase Order Origin ZipCode(Tax)(CsPooZipCode)	CyberSource purchase order origin data – used by Tax
CyberSource Purchase Order Origin Country Code(Tax)(CsPooCountryCode)	CyberSource purchase order origin data – used by Tax
CyberSource Nexus States List(CsNexus)	CyberSource nexus state list
CyberSource No Nexus States List(CsNoNexus)	CyberSource no nexus state list
Disable logging of CyberSource traces(CsDebugCybersource)	To enable/disable debugging
CyberSource Device Fingerprintenabled(CsDeviceFingerp printEnabled)	To enable / disable the device fingerprint for advanced fraud detection
JetmetrixLocation(CsJetmetrixLocat ion)	Location of device fingerprint service
CsDeviceFingerprintOrgId(CsDevice FingerprintOrgId)	Id of DeviceFingerprintOrgId
Device Fingerprint Redirection(CsDeviceFingerprintRe directionType)	None,static or dynamic for type of redirection.
CyberSource – Enable Tokenization(CsTokenizationEnable )	To enable/disable tokenization call in CC Authorization
CyberSource Save Proof.xml(PA)(CsPaEnableProofXM L)	To enable/disable saving of proof.xml in order object
Alipay Payment Type(apPaymentType)	Alipay Payment Type for Domestic as well as International Payment
Test Reconciliation ID for Alipay(apTestReconciliationID)	Test Reconciliation ID for Alipay to test initiate and check status services.
Decision Manager Enable for Card (csCardDecisionManagerEnable)	Setting to enable/disable decision manager for Credit Card authorization
CyberSource correct shipping state (CsCorrectShipState)	Default false, whether expect cybersource to correct the shipping state

CyberSource Save ParesStatus (PA) (CsPaSaveParesStatus)	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.
Master Card Auth Indicator (csMasterCardAuthIndicator)	Default None Preauthorization: 0 passed in request Final authorization: 1 passed in request Undefined authorization: omit authIndicator field from the request message
CsDeveloperID	Merchant developer Id ,mandatory for Cybersource configuration (max limit- String 8 char)

**Note:**

- CyberSource Merchant Key (CsSecurityKey) - Security key is maintained at site preference level due to the bigger length of the Key which cannot be stored at service level
- Please contact Cybersource support for acquiring the Key

**Site preference data**

Update CyberSource site preference through Business Manager >StoreFront Site> Site Preferences> Custom Preferences.

The screen shot below depicts the site preferences configuration:

Instance Type	Sandbox	Value	Default Value
CyberSource AVS Decline Flags (AVS)	A,B,C,E,G,I,K,N,O,R,S,1,2		
CyberSource Ignore AVS Result (AVS)	Yes	No	
CyberSource correct shipping state	Yes	No	
Cybersource - Enable Delivery Address Verification	YES (YES)	YES	
Cybersource - On Delivery Address Verification Failure	APPROVE (APPROVE)	DECLINE	
Disable logging of Cybersource traces	Yes	No	
CsDeveloperID*	sapientintro		

<b>Cybersource - On Delivery Address Verification Failure:</b>	<input type="button" value="DECLINE (DECLINE) (default)"/> <input type="button" value=""/>	DECLINE (DECLINE)
Prevent/enable authorization of payment if the DeliveryAddressVerification fails.		
<b>Cybersource - Enable Delivery Address Verification:</b>	<input type="button" value="YES (YES) (default)"/> <input type="button" value=""/>	YES (YES)
This will enable Delivery Address Verification, to help minimize risk of unauthorized purchases.		
<b>CyberSource Merchant ID (PA):</b>	sapient_nitro	
<b>CyberSource Merchant Password (PA):</b>	Wz/S0jZi10wezu7TJuXAikAjmaqnID1LxGfDnQaLq2LB9z6	
<b>CyberSource Merchant Name (PA):</b>	Merchant_ID	
<b>CyberSource Purchase Order Acceptance City (Tax):</b>	Lyndhurst	
<b>CyberSource Purchase Order Acceptance State Code (Tax):</b>	NJ	
<b>CyberSource Purchase Order Acceptance Zip Code (Tax):</b>	76208	
<b>CyberSource Purchase Order Acceptance Country Code (Tax):</b>	US	
<b>CyberSource Purchase Order Origin City (Tax):</b>	Lyndhurst	
<b>CyberSource Purchase Order Origin StateCode (Tax):</b>	NJ	
<b>CyberSource Purchase Order Origin ZipCode (Tax):</b>	76208	
<b>CyberSource Purchase Order Origin Country Code (Tax):</b>	US	
<b>CyberSource Nexus States List:</b>	<a href="#">Add Another Value</a>	
<b>CyberSource No Nexus States List:</b>	<a href="#">Add Another Value</a>	
<b>Disable logging of Cybersource traces:</b>	<input type="checkbox"/>	false
Some trace information will be stored in the impex folder on the server.		
<b>Jetmetric Location:</b>	<input type="text" value="https://h.online-metrix.net"/>	
Jetmetric Location for Device fingerprint		
<b>CsDeviceFingerprintOrgId:</b>	<input type="text" value="1snn5n9w"/>	

<b>CsDeviceFingerprintOrgId:</b>	<input type="text" value="1snn5n9w"/>	Organization ID for the device fingerprint check.
<b>Cybersource Device Fingerprint enabled:</b>	<input checked="" type="checkbox"/>	false
	If enabled, a unique ID (fingerprint) of the customer's e	
<b>Device Fingerprint Redirection:</b>	<input type="text" value="dynamic"/>	none (none)
	'none' for no redirection, 'static' for pipeline redirection mappings Site Urls->Static mapping: # Mapping for Cy	
<b>Cybersource - Enable Tokenization:</b>	<input type="text" value="YES (YES) (default)"/>	YES (YES)
	This will enable Payment Tokenization.	
<b>CyberSource Save Proof.xml (PA):</b>	<input checked="" type="checkbox"/>	false
<b>CyberSource Save ParesStatus (PA):</b>	<input checked="" type="checkbox"/>	false
	Save ParesStatus received as response from Pa Author merchant account settings.	
<b>Decision Manager Enable for Card:</b>	<input checked="" type="checkbox"/>	true
<b>Master Card Auth Indicator:</b>	<input type="text" value="1 (Final authorization)"/>	NONE ( <i>Undefined authorization</i> )
	Preauthorization: 0 passed in request Final authorizati	
<b>CyberSource correct shipping state:</b>	<input checked="" type="checkbox"/>	false

## Alipay Site Preference

Verify Alipay Site Preferences in already existing custom preferences group “CyberSource”.

### Site Preferences Attribute

Site Preferences	Description
CyberSource Endpoint (CsEndpoint)	CyberSource Alipay endpoint on different environments
Alipay Payment Type(apPaymentType)	Alipay Payment Type for Domestic as well as International Payment
Test Reconciliation ID for Alipay(apTestReconciliationID)	Test Reconciliation ID for Alipay

### Site preference data

Update CyberSource Alipay site preference through Business Manager >StoreFront Site> Site Preferences > Custom Preferences.-CyberSource Alipay  
The screen shot below depicts the site preferences configuration:

CyberSource Endpoint	Test (Test)	Test
Alipay Payment Type	International (APY)	Domestic Alipay Payment Type for Domestic as well as International Payment
Test Reconciliation ID for Alipay	International COMPLETED (110115230002)	Domestic COMPLETE Test Reconciliation ID for Alipay

## CyberSource Apple Pay Site Preference

### Site Preferences Attribute

Site Preferences	Description
CyberSource Interface Apple Pay User(CsApplePayUser)	CyberSource REST Interface Header Authentication User, need to be configured to authenticate the REST Interface for valid access.
CyberSource Interface Apple Pay Password (CsApplePayPassword)	CyberSource REST Interface Header Authentication Password, need to be configured to authenticate the REST Interface for valid access.

### Site Preference data

Update CyberSource Apple Pay site preference through Business Manager >StoreFront Site> Site Preferences > Custom Preferences.-CyberSource Apple Pay

The screen shot below depicts the site preferences configuration:

The screenshot shows the 'CyberSource Apple Pay' configuration page. At the top, there's a dropdown for 'Instance Type' set to 'Sandbox'. Below it is a search bar with placeholder 'Search by IDs...' and a magnifying glass icon. The main area displays two configuration items in a table:

Name	Value
CyberSource Interface Apple Pay User*	test
CyberSource Interface Apple Pay Password*	****

## CyberSource\_paypal Site Preference

### Site Preferences Attribute

Site Preferences	Description
Decision Manager Enable for Paypal(isDecisionManagerEnable)	Decision Manager Enable for Paypal
Billing Agreement(payPalBillingAgreements)	Enable/Disable PayPal Billing Agreements
Paypal Order Type(CspaypalOrderType)	Paypal Order type
Funding Source (CsFundingSource)	Funding Source
CsEnableExpressPaypal	Cyber Source Flag for Enable paypal express in cart and Minicart page

### Site preference data

Update CyberSource\_paypal site preference through Business Manager >StoreFront Site> Site Preferences > Custom Preferences.-CyberSource\_paypal

The screen shot below depicts the site preferences configuration:

The screenshot shows a configuration interface for site preferences. It consists of five horizontal rows, each containing a label on the left and a dropdown menu on the right. The dropdown menus have 'Yes' and 'No' options, except for the last one which has 'None'. The right side of each row shows the selected value.

Decision Manager Enable for Paypal	Yes	No
Billing Agreement	Yes	Enable/Disable PayPal Billing Agreements
Paypal Order Type	Custom Order (CUSTOM)	Custom Order
Funding Source	None	UNRESTRICTED
CsEnableExpressPaypal	Yes	Cyber Source Flag for Enable paypal express in cart and Minicart page

## CyberSource Android Pay Site Preference

### Site Preferences Attribute

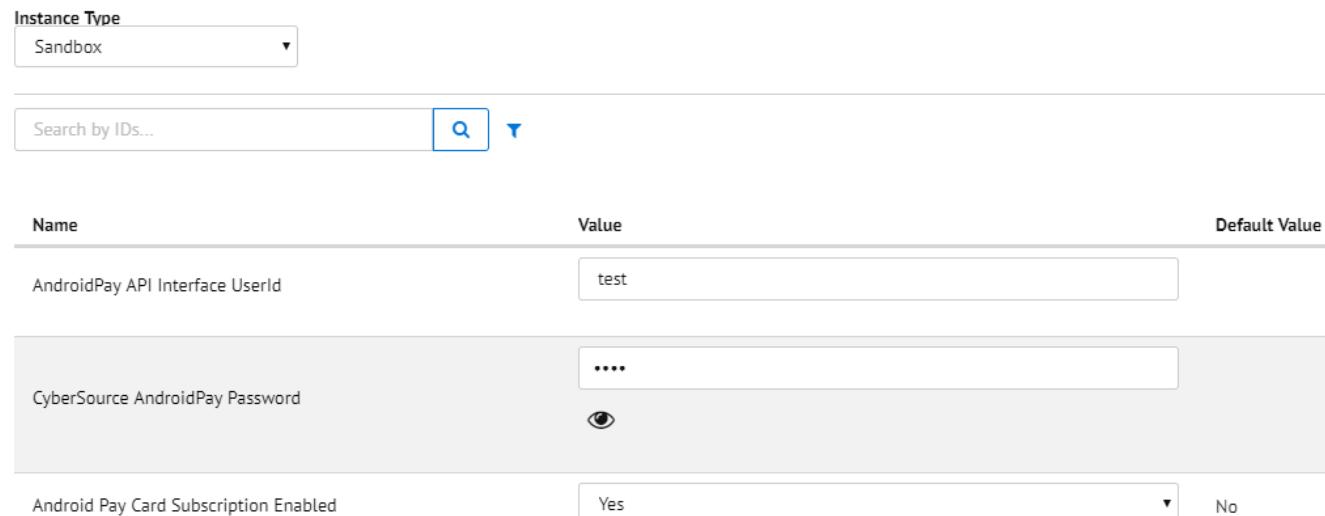
Site Preferences	Description
Android Pay API Interface UserId(cybAndroidPayInterfaceUser)	CyberSource REST Interface Header Authentication User, need to be configured to authenticate the REST Interface for valid access.
CyberSource Android Pay Password(cybAndroidPayInterfacePassword)	CyberSource REST Interface Header Authentication Password, need to be configured to authenticate the REST Interface for valid access.
Android Pay Card Subscription Enabled(CsAndoridPayTokenizationEnabled)	Enable/disable subscription during autherisation, subscription is stored at order level attributes only

### Site preference data

CyberSource Android Pay site preference through Business Manager >StoreFront Site> Site Preferences > Custom Preferences.-CyberSource Android Pay

The screen shot below depicts the site preferences configuration:

### CyberSource AndroidPay



Name	Value	Default Value
AndroidPay API Interface UserId	test	
CyberSource AndroidPay Password	....	
Android Pay Card Subscription Enabled	Yes	No

## CyberSource Klarna Site Preference

### Site Preferences Attribute

Site Preferences	Description
Klarna Merchant URL Redirection Required(isKlarnaRedirectionRequired)	Enable/disable Klarna Merchant URL Redirection if Required
Klarna Decision Manager Required(isKlarnaDecisionManagerRequired)	Enable/disable Klarna Decision Manager if Required
Klarna JS API Path (klarnaJSAPIPath)	Klarna JS API Path

### Site preference data

CyberSource Klarna site preference through Business Manager >StoreFront Site> Site Preferences >

## Custom Preferences.-CyberSource Klarna

The screen shot below depicts the site preferences configuration

Name	Value	Default Value
Klarna Merchant URL Redirection Required	No	Yes
Klarna Decision Manager Required	Yes	Yes
Klarna JS API Path	https://credit.klarnacd.net/lib/v1/api.js	

## CyberSource Bank Transfer APM's Site Preferences

### Site Preferences Attribute

Site Preferences	Description
Merchant Descriptor Postal Code(merchantDescriptorPostalCode)	Merchant Descriptor Postal Code
Merchant Descriptor(merchantDescriptor)	Merchant Descriptor
Merchant Descriptor Contact(merchantDescriptorContact)	Merchant Descriptor Contact
Merchant Descriptor State(merchantDescriptorState)	Merchant Descriptor State
Merchant Descriptor Street(merchantDescriptorStreet)	Merchant Descriptor Street
Merchant Descriptor City(merchantDescriptorCity)	Merchant Descriptor City
Merchant Descriptor Country(merchantDescriptorCountry)	Merchant Descriptor Country

### Site preference data

CyberSource Bank Transfer site preference through Business Manager >StoreFront Site> Site Preferences > Custom Preferences.-CyberSource Bank Transfer

The screen shot below depicts the site preferences configuration

## CyberSource Bank Transfer

Instance Type  
Sandbox

Search by IDs...  

Name	Value	Default Value
Merchant Descriptor Postal Code	<input type="text"/>	94128
Merchant Descriptor*	<input type="text"/>	Online Store
Merchant Descriptor Contact	<input type="text"/>	6504327350
Merchant Descriptor State	<input type="text"/>	CA
Merchant Descriptor Street	<input type="text"/>	P.O. Box 8999

## CyberSource Visa Checkout Site Preference

### Site Preferences Attribute

Below is the list of attributes added in CyberSource site preference?

- Use the sdk.js JavaScript library to control the operation of Visa Checkout [Field name: **cybVisaSdkJsLibrary**]

Environment	Possible values
Sandbox	<a href="https://sandbox-assets.secure.checkout.visa.com/checkout-widget/resources/js/integration/v1/sdk.js">https://sandbox-assets.secure.checkout.visa.com/checkout-widget/resources/js/integration/v1/sdk.js</a>
LIVE	<a href="https://assets.secure.checkout.visa.com/checkout-widget/resources/js/integration/v1/sdk.js">https://assets.secure.checkout.visa.com/checkout-widget/resources/js/integration/v1/sdk.js</a>

- Use the v-button img class to render a Visa Checkout button that a consumer clicks to initiate a payment [Field name: **cybVisaButtonImgUrl**]

Environment	Possible values
Sandbox	<a href="https://sandbox.secure.checkout.visa.com/wallet-services-web/xo/button.png">https://sandbox.secure.checkout.visa.com/wallet-services-web/xo/button.png</a>
LIVE	<a href="https://secure.checkout.visa.com/wallet-services-web/xo/button.png">https://secure.checkout.visa.com/wallet-services-web/xo/button.png</a>

- Use below configuration fields for VISA checkout setup and must be different for sandbox and production based on merchant accounts

Field	Description
cybVisaExternalProfileId	Use profile's name, created externally by a merchant whom Visa Checkout uses to populate settings, such as accepted card brands and shipping regions. The properties set in this profile override properties in the merchant's current profile. (Alphanumeric; maximum 50 characters)
cybVisaAPIKey	The Visa Checkout account API key specified in cybersource business center (Alphanumeric; maximum 100 characters)
cybVisaSecretKey	The secret key specified VISA Checkout account profile

- Use below configuration fields for VISA checkout features and can be kept same for sandbox and production

Field	Description	Possible Values
cybVisaButtonSize	You can either specify size to display a standard size button, or you can specify height and width to specify a custom size. If you do not specify size or both height and width, the button size is 213 pixels. If you specify height or width, the value of size is ignored	154 - small 213 - medium (default) 425 - High resolution or large
cybVisaButtonHeight	Height of the button, in pixels, You must specify the height if you specify a value for width	34 47 94
cybVisaButtonWidth	Width of the button, in pixels, You must specify the width if you specify a value for height	-less than 477 if height is 34; default value is 154 -greater than 212 and less than 659 if height is 47; default value is 213 -greater than 424 and less than 1317 if height is 94; default value is 425
cybVisaButtonColor	The color of the Visa Checkout button	standard (default) neutral
cybVisaCardBrands	Override value for brands associated with card art to be displayed. If a brand matching the consumer's preferred card is specified, the card art is displayed on the button; otherwise, a generic button is displayed	Comma Separated list is accepted VISA MASTERCARD AMEX DISCOVER

cybVisaThreeDSActive	Whether Verified by Visa (VbV) is active for this transaction. If Verified by Visa is configured, you can use threeDSActive to deactivate it for the transaction; otherwise, VbV will be active if it has been configured	false (default) true
cybVisaThreeDSSuppressChallenge	Whether a Verified by Visa (VbV) consumer authentication prompt is suppressed for this transaction. If true, VbV authentication is performed only when it is possible to do so without the consumer prompt.	true - Do not display a consumer prompt. false - Allow a consumer prompt
cybVisaTellMeMoreLinkActive	Indicate whether Tell Me More Link to be displayed with VISA button	true (default) false
cybVisaButtonOnCart	Indicate whether Visa checkout button to be displayed on minicart and cart page	true (default) false

#### Site preference data

Update CyberSource site preference through Business Manager >StoreFront Site> Site Preferences > Custom Preferences.

The screen shot below depicts the site preferences configuration:

**Cybersource Visa Checkout**

Search by IDs...

Instance Type	Sandbox	▼
Name	Value	
cybVisaAPIKey	V6UQMSAHOHQCB3PWWIG13sqiNEYQyK5OkkessnfGmIGaEVZE	
The Visa Checkout account API key specified in cybersource business center (Alphanumeric; maximum 100 characters)		
cybVisaButtonColor*	standard (standard)	▼
The color of the Visa Checkout button standard (default) neutral		
cybVisaButtonHeight	34 (34)	▼
Height of the button, in pixels. You must specify the height if you specify a value for width 34 47 94		
cybVisaButtonImgUrl*	https://sandbox.secure.checkout.visa.com/wallet Sandbox https://sandbox.secure.checkout.visa.com/wallet-services-web/xo/button.png LIVE	

**CyberSource Secure Acceptance Site Preference****Site Preferences Attribute**

Attribute ID	Data Type	Description
CsSAOverrideBillingAddress	Boolean	Cybersource Secure Acceptance Override Billing Address
CsSAOverrideShippingAddress	Boolean	Cybersource Secure Acceptance Override Shipping Address
CsCvnDeclineFlags	Boolean	CyberSource Ignore CVN Result (CVN) [should be in sync with CYB profile cvn flag]
SA_Redirect_AccessKey	String	Secure Acceptance Redirect Access Key. <b>Note:</b> Contact CyberSource support team for more details.
SA_Redirect_ProfileID	String	Secure Acceptance Redirect Profile ID <b>Note:</b> Contact CyberSource support team for more details.
SA_Redirect_SecretKey	String	Secure Acceptance Redirect Secret Key <b>Note:</b> Contact CyberSource support team for more details.
SA_Iframe_AccessKey	String	Secure Acceptance Iframe Access Key <b>Note:</b> Contact CyberSource support team for more details.
SA_Iframe_ProfileID	String	Secure Acceptance Iframe Profile ID

		<b>Note:</b> Contact CyberSource support team for more details.
SA_Iframe_SecretKey	String	Secure Acceptance Iframe secret key <b>Note:</b> Contact CyberSource support team for more details.
SA_Silent_AccessKey	String	Secure Acceptance Silent Post Access Key <b>Note:</b> Contact CyberSource support team for more details.
SA_Silent_ProfileID	String	Secure Acceptance Silent Post Profile ID <b>Note:</b> Contact CyberSource support team for more details.
SA_Silent_SecretKey	String	Secure Acceptance Silent Post Secret Key <b>Note:</b> Contact CyberSource support team for more details.
CsSARedirectFormAction	String	Cybersource secure acceptance redirect form action <b>Note:</b> Contact CyberSource support team for more details.
CsSAIframetFormAction	String	Cybersource secure acceptance Iframe form action <b>Note:</b> Contact CyberSource support team for more details.
Secure_Acceptance_Token_Create_Endpoint	String	Secure Acceptance Token Create Endpoint <b>Note:</b> Contact CyberSource support team for more details.
Secure_Acceptance_Token_Update_Endpoint	String	Secure Acceptance Token Update Endpoint <b>Note:</b> Contact CyberSource support team for more details.

## Site Preferences Data

Name	Value	Default Value
Secure Acceptance Redirect Profile ID	B6D0DA91-DF4F-4FC8-BFC5-C6851698A452	
Secure Acceptance Redirect Secret Key	023ad2d6731a485d98220f7a1c09a955169a78b	
Secure Acceptance Redirect Access Key	e0ae7f5bf469321892f5549a3f7248dc	
Cybersource Secure Acceptance Override Billing Address	Yes ▾	No
Cybersource Secure Acceptance Override Shipping Address	Yes ▾	No
Cybersource secure acceptance redirect form action	https://testsecureacceptance.cybersource.com/pa	
Secure Acceptance Silent Post Profile ID	2E714D8B-E7BE-4A02-9A48-6BAA65406D3C	
Secure Acceptance Silent Post Secret Key	a57a860d7f0f450bb1d870ffd3b2f24e734997461	
Secure Acceptance Silent Post Access Key	a8b2c94df04b3e63a1c79919ca0a1c31	

## Configure Payment Method

### Generic Changes

Attribute ID	Data Type	Localizable	Description
merchantID	String	Yes	Attribute to store merchant id specific to payment method. If configured will be used for service calls else global site preference of Merchant ID will be used
merchantKey	String	Yes	Attribute to store merchant key specific to payment method. If configured will be used for service calls else global site preference of Merchant Key will be used

### Bank Transfer APM's

Attribute ID	Data Type	Localizable	Description
isBicEnabled	Boolean	No	Attribute to check if BIC field is required for EPS and GIROPAY to display on billing page

isSupportedBankListRequired	Boolean	No	Attribute to check if bank list is required for IDEAL to display on billing page
paymentType	Enum of Strings	No	Payment type for bank transfer APMs, required to add new value for future bank transfer APM

Customer Groups: All [Edit](#)

Min/Max Payment Ranges: [Min/Max Payment Ranges](#)

\$  to

Bank Transfer Options

Is Supported Bank List Required:

Is Bic Enabled:

Payment Type: - NONE -

Cybersource Credentials

merchantID:

merchantKey:

[Apply](#) [Cancel](#)

## Configure Custom Objects

### Retail POS

Two custom objects have been added for POS transactions. Ensure to populate these custom objects with merchant specific data. Below are screenshots of sample custom object entry for both custom objects:

#### a. POS\_MerchantIDs

Custom Objects

Manage Custom Objects

This page allows you to manage your custom objects based on your object type definitions.

Use the object type select box below to select the object type definition you want to search custom objects for. Use the object ID search field to further limit your search to objects with certain key values.

Click [New](#) to create new custom object instances for the selected object type. Click [Delete](#) to delete checked custom object instances.

Custom Object Search

Object Type: [POS\\_MerchantIDs](#) Object ID:  [Find](#) [Simple](#) [Advanced](#)

Select All	POS Location (ID)	Scope	Last Modified	Expires On
<input type="checkbox"/>	LA	Site	5/28/14 6:56:51 am	
<input type="checkbox"/>	MA	Site	5/28/14 6:55:45 am	
<input type="checkbox"/>	NY	Site	5/28/14 6:56:21 am	

[Edit All](#) [Edit Selected](#) [New](#) [Delete](#)

Showing 1 - 3 of 3 items

Custom Objects > MA - General

**General**

### Manage 'MA' (POS\_MerchantIDs)

Fields with a red asterisk (\*) are mandatory. You can view and edit name and description in other languages, if required. Click **Apply** to save the details.

<b>POS</b>	<b>POS Location:</b> <input type="text" value="MA"/>	<b>?</b>
	<b>POS Merchant ID:</b> <input type="text" value="sapient_nitro_eval"/>	<b>?</b>
	<b>POS Merchant Security Key:</b> <input type="text" value="Fofhc/S3qMm/f8Kks0st9KksqSySFR4VIEQkboiVoJm"/>	<b>?</b>

**Apply** **Reset**

[<< Back to List](#)

## b. POS\_TerminalMapping

Custom Objects

### Manage Custom Objects

This page allows you to manage your custom objects based on your object type definitions.

Use the object type select box below to select the object type definition you want to search custom objects for. Use the object ID search field to further limit your search to objects with certain key values.

Click **New** to create new custom object instances for the selected object type. Click **Delete** to delete checked custom object instances.

Custom Object Search					<b>Simple</b>	<b>Advanced</b>
Object Type:	POS_TerminalMapping	Object ID:	<input type="text"/>	<b>Find</b>		
<b>Select All</b>	Serial Number (serialID)	Scope	Last Modified	Expires On		
<input type="checkbox"/>	<a href="#">ABCD1234POSCYBS1</a>	Site	5/28/14 4:02:44 am			
<input type="checkbox"/>	<a href="#">ABCD1234POSCYBS2</a>	Site	5/28/14 4:00:56 am			
<input type="checkbox"/>	<a href="#">ABCD1234POSCYBS3</a>	Site	5/28/14 4:03:07 am			

**Edit All** **Edit Selected** **New** **Delete**

Showing 1 - 3 of 3 items

Custom Objects > ABCD1234POSCYBS1 - General

**General**

### Manage 'ABCD1234POSCYBS1' (POS\_TerminalMapping)

Fields with a red asterisk (\*) are mandatory. You can view and edit name and description in other languages, if required. Click **Apply** to save the details.

<b>POS</b>	<b>Serial Number:</b> <input type="text" value="ABCD1234POSCYBS1"/>	<b>?</b>
	<b>Terminal ID:</b> <input type="text" value="001"/>	<b>?</b>

**Apply** **Reset**

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## SA Merchant Post Notifications

A new custom object has been added for Secure Acceptance Web/Mobile and Iframe transactions. Ensure to populate these custom objects for every order placed through SA Web Mobile and Iframe. Below are screenshots of sample custom object entry:

**Custom Object Search**

Object Type:	SA_MerchantPost	Object ID:	Find
<u>Select All</u>	(OrderID)	Scope	Last Modified
<input type="checkbox"/>	<a href="#">00002610</a>	Site	8/4/17 11:14:52 am
<input type="checkbox"/>	<a href="#">00002611</a>	Site	8/4/17 11:16:13 am
<input type="checkbox"/>	<a href="#">00002606</a>	Site	8/4/17 11:04:35 am
<input type="checkbox"/>	<a href="#">00002609</a>	Site	8/4/17 11:13:19 am
<input type="checkbox"/>	<a href="#">00002615</a>	Site	8/4/17 11:21:17 am
<input type="checkbox"/>	<a href="#">00002622</a>	Site	8/4/17 11:34:14 am
<input type="checkbox"/>	<a href="#">00002626</a>	Site	8/4/17 11:39:42 am
<input type="checkbox"/>	<a href="#">00002630</a>	Site	8/4/17 11:46:09 am
<input type="checkbox"/>	<a href="#">00002714</a>	Site	8/4/17 10:02:55 pm
<input type="checkbox"/>	<a href="#">00002715</a>	Site	8/4/17 10:04:35 pm

**General**

Manage '00002610' (SA\_MerchantPost)

Fields with a red asterisk (\*) are mandatory. You can view and edit the name and description in other languages, if required. Click Apply to save the details.

```
postParams: [{"Decision": "DECLINE", "ReasonCode": "481", "RequestID": "5018596909966865204101", "CardType": "002", "RequestToken": "Ahj7wSTEA8F4/LoDAOFESDduwtGzhIEazl8aTTbpbwjHhgElvCaMceaQO5u3DBeHSTLF18C9zoDpMQDwXj8ugMAUXA7M", "AuthorizationAmount": "147.79", "AuthorizationCode": "888888", "AuthorizationReasonCode": "100", "SubscriptionID": "null", "req_bill_to_address_line1": "3375 Joseph Martin Hwy", "req_bill_to_address_line2": "", "req_bill_to_email": "reject@smith.com", "req_bill_to_phone": "9783621553", "req_bill_to_address_city": "Martinsville", "req_bill_to_address_postal_code": "24112-0495", "req_bill_to_address_state": "AZ", "req_bill_to_forename": "Reject", "req_bill_to_surname": "Smith", "req_bill_to_address_country": "us", "req_ship_to_address_line1": "3375 Joseph Martin Hwy", "req_ship_to_address_line2": "", "req_ship_to_forename": "Reject", "req_ship_to_phone": "9783621553", "req_ship_to_address_city": "Martinsville", "ship_to_address_postal_code": "null", "req_ship_to_address_state": "AZ", "req_ship_to_surname": "Smith", "req_ship_to_address_country": "us", "payment_token": "null", "req_payment_token": "null", "req_card_expiry_date": "01-2022", "req_card_number": "xxxxxxxxxxxxx0007", "req_card_type": "002"}]
```

processed:

OrderID\*: [00002610](#)

## Bank Transfer APM's Bank List

A new custom object has been added for Bank transfer bank list. Ensure to populate these custom objects with merchant specific data. Below are screenshots of sample custom object entry:

Custom Object Search			
Object Type:	BTBankList	Object ID:	<input type="text"/>
<a href="#">Select All</a>	(BTBankList)	Scope	Last Modified
<input type="checkbox"/>	<a href="#">088e54dc66f08e27d0e2b841df</a>	Organization	8/17/17 5:54:58 am
<input type="checkbox"/>	<a href="#">65933998044aae1a3e252c7687</a>	Organization	8/17/17 5:54:58 am
<a href="#">Edit All</a>	<a href="#">Edit Selected</a>		

## Manage '088e54dc66f08e27d0e2b841df' (BTBankList)

Fields with a red asterisk (\*) are mandatory. You can view and edit the name and description in other languages, if required. Click **Apply** to save the details.

Bank List	
Bank Name:	<input type="text"/> TBM Bank #2
BTBankList:	<input type="text"/> 088e54dc66f08e27d0e2b841df
Bank Id:	<input type="text"/> ideal-TESTNL99
Payment Type:	<input type="text"/> IDL

[<< Back to List](#)

## Custom Attribute in Customer Profile

Custom Attribute “billingAgreementID” has been created in Customer’s profile system object to store the PayPal Billing Agreement ID. Value of this Custom Attribute will be used to place the order with PayPal payment method.

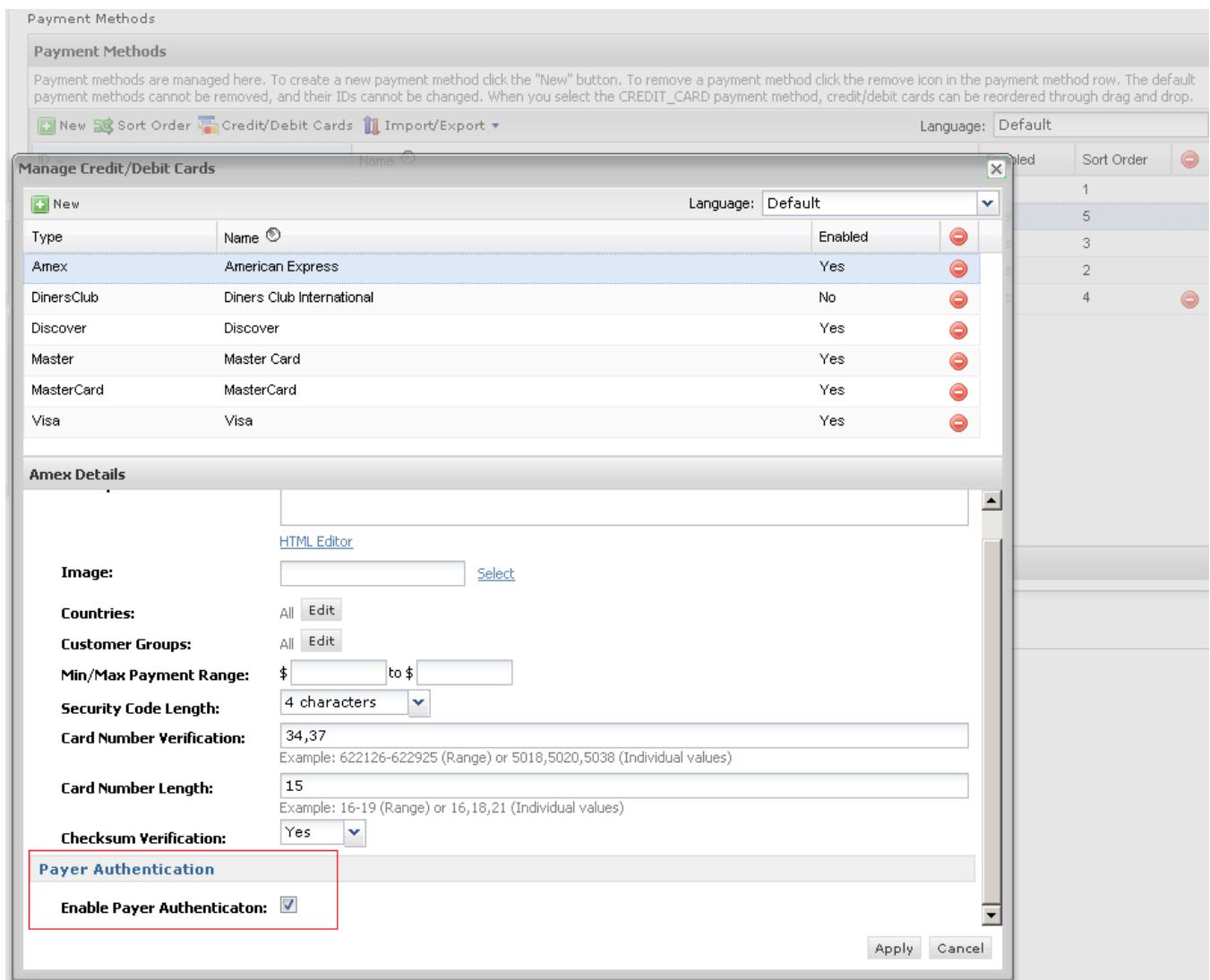
Attribute ID	Attribute Name	Type
billingAgreementID	PayPal Billing Agreement ID	String

CYB
PayPal Billing Agreement ID: <input type="text"/>

## Enable Payer Authentication for cards

Update credit card preference through Business Manager >StoreFront Site> Ordering> Payment Methods> Credit Card/Debit Cards >Choose cardand then modify Enable Payer Authentication checkbox

The screen shot below depicts the site preferences configuration:



## Update shipping method preference

Update shipping method preference through Business Manager >StoreFront Site> Ordering> Shipping Methods > Name >CyberSource Shipping ID  
The screen shot below depicts the site preferences configuration:

[Shipping Methods > 012](#)

Select Language: Default

**General**

Use the fields below to change name and description of the shipping method as they should appear in the storefront. If the cost of this shipping method is based on the cost defined by another shipping method, select this base shipping method. Note The shipping calculation process only considers a 1-level dependency). Select an appropriate tax class for the shipping method.

Fields with a red asterisk (\*) are mandatory.

ID:*	012	?
Name:	Express	?
Description:	Orders shipped outside continental US received in 2-3 business days	?
Enabled:	<input checked="" type="checkbox"/>	?
Default:	<input type="checkbox"/>	?
Based on: *	None	?
Tax Class:	standard	?

**Cybersource Shipping ID**

Cybersource Shipping ID: - NONE -

Shipment Cost

In this view, you can define the costs for the selected shipping method. To specify a flat cost, add one entry the cost table. Note: You can define a fix cost amount (e.g. \$ 4.99), or let the cost depend on the order value. To define scaled shipping costs, add as many table entries as needed. To confirm changed order values or shipping costs, click 'Apply'. To remove a table entry, use the 'Delete' link.

Shipment Value	Shipment Cost	Remove
USD 0.00 or more	USD 0.00 fixed price	Remove
USD 0.01 or more	USD 16.99 fixed price	Remove
USD 100.00 or more	USD 22.99 fixed price	Remove
USD 200.00 or more	USD 28.99 fixed price	Remove
USD 500.00 or more	USD 34.99 fixed price	Remove

## Applying CyberSource Cartridge to the Site

Go to the “Administration” in the left hand list to expand the menu and select Sites > Manage Sites link. This will open a list of the active sites on the Demandware platform in your account. Click on the site for which you wish to add the CyberSource cartridge. This will open the General Settings page for that site.

Add int\_cybersource cartridges to the BM cartridge path.

Add int\_cybersource\_pipelines and int\_cybersource\_cartridges to the cartridge path as depicted in the following screen:

The screenshot shows a browser window with multiple tabs open, all related to SiteGenesis. The main content is the 'SiteGenesis - Settings' page under 'Administration > Sites > Manage Sites'. The 'Settings' tab is selected. The page displays configuration for the 'int\_cybersource' cartridge, specifically for the 'All' instance type. It includes fields for 'HTTP Hostname' and 'HTTPS Hostname', both currently empty. Below these, the 'Cartridges' section shows 'app\_storefront\_controllers:app\_storefront\_core:int\_cybersource\_bc\_api.core' and the 'Effective Cartridge Path' shows 'app\_storefront\_controllers:app\_storefront\_core:int\_cybersource\_controllers:int\_cybersource\_bc\_api.core'. At the bottom right are 'Apply' and 'Reset' buttons. A note at the top states: 'Click **Apply** to save the details. Click **Reset** to revert to the last saved state.' The status bar at the bottom indicates the system is running on SiteGenesis Time Zone: Coordinated Universal Time | Instance Time Zone: Eastern Standard Time | Version: 16.5, last updated May 20, 2016 (Compatibility Mode: 16.2).

## Batch Jobs

Cybersource cartridge has 4 batch Jobs created for different functional items and are placed under int\_cybersource cartridge:

To import the following Job Schedule configuration Go Administration > Operations > Import & Export-> upload the below mentioned file and import the configuration.

- /metadata/site\_genesis\_meta.zip and select "Cybersource-Jobs.xml"—this will add below jobs
- 1. APCheckStatusJob
- 2. CyberSource: Decision Manager Order Update (Controllers & Pipelines)
- 3. SecureAcceptanceMerchantPostJob
- 4. iDealBankOptionJob

ID	Status	Last Run	Execution Scope	Resources
<a href="#">APCheckStatusJob</a>	OK	8/17/2017 6:34 am	2	-
<a href="#">CyberSource: Decision Manager Order Update (Controllers &amp; Pipelines)</a>	OK	8/17/2017 3:10 am	2	-
<a href="#">SecureAcceptanceMerchantPostJob</a>	-		2	-
<a href="#">iDealBankOptionJob</a>	OK	8/17/2017 5:54 am	2	customobject

Below steps are used to configured each job in Business manager

### Batch Job for AP Check Status

- Add new batch job for AP check status service
- Verify the newly added batch jobs for AP Check Status Service
- Go to Administration -> Operations -> Job Schedules

The screenshot shows the 'Step Configurator' tab selected for the 'APCheckStatusJob'. On the left, under 'Global Parameters', there is a 'Scope' section showing '2 Sites Assigned' and a list containing 'APCheckStatusJob'. The main panel displays the configuration details for this step.

### Select and configure step

#### ExecuteScriptModule

Executes a function exported by a script module. The module ID has to be configured at parameter 'ExecuteScriptModule.Module'.

ID\*

APCheckStatusJob

Description

Check payment status for APM's

ExecuteScriptModule.Module\*

int\_cybersource/cartridge/scripts/jobs/APCheckStatu

Global  
Parameters

ExecuteScriptModule.FunctionName

checkPaymentStatusJob

Global  
Parameters

ExecuteScriptModule.Transactional

Global

## Batch Job for Conversion Detail Report

- Add new batch job to update order status in BM for CyberSource “Accepted” & “Rejected” orders.

Verify the newly added batch jobs for Conversion detail report service.

Go to Administration -> Operations -> Job Schedules

The screenshot shows the 'Job Steps' tab selected for the 'CyberSource: Decision Manager Order Update (Controllers & Pipelines)' job. On the left, under 'Job Parameters', there is a 'Scope' section showing '2 Sites Assigned' and a list containing 'UpdateOrderStatus : Controllers & Pipelines'. The main panel displays the configuration details for this step.

Select and Configure Step

ExecuteScriptModule

Context: Organization,Site

ID\*

UpdateOrderStatus : Controllers & Pipelines

Description

Update unconfirmed orders based on Accept / Reject decisions made in CS Business Center.

ExecuteScriptModule.Module\*

int\_cybersource/cartridge/scripts/jobs/DMOrderStatu

ExecuteScriptModule.FunctionName

orderStatusUpdate

ExecuteScriptModule.Transactional

ExecuteScriptModule.TimeoutInSeconds

Always execute on restart.

Back

Assign

The screenshot shows the 'Job Steps' tab selected in the navigation bar. A specific step, 'UpdateOrderStatus : Controllers & Pipelines', is highlighted. The right panel, titled 'Select and Configure Step', contains the configuration for this step. It includes sections for 'ExecuteScriptModule' (with context 'Organization\_Site' and parameter 'ExecuteScriptModule.TimeoutInSeconds'), 'Custom Parameters' (MerchantId, SAFlexKeyID, SAFlexSharedSecret), and 'Exit Status Rules'. There are also 'Back' and 'Assign' buttons at the bottom.

The batch job created for cybersource conversion detail report specified below, it updates the status of order in demandware which are in CREATED state and mark them as “CANCELLED” for rejected order or “NEW” for accepted order. The accepted orders are marked for “READY FOR EXPORT” as well.

## Secure Acceptance Merchant Post Batch Job

- Add new Service for secure Acceptance Order update via merchant post notifications

After import above file ensure to update credentials as per cybersource merchant account appropriately in BM.

The screenshot shows the 'Step Configurator' tab selected in the navigation bar. The main area displays the configuration for the 'SAMerchantPostJob' step. It includes fields for 'ID\*' (set to 'SAMerchantPostJob'), 'Description' ('To handle failed order'), and 'ExecuteScriptModule.Module\*' (set to 'int\_cybersource/cartridge/scripts/jobs/SAMerchantPi'). There are also sections for 'ExecuteScriptModule.FunctionName' (set to 'sAMerchantPostJob') and 'ExecuteScriptModule.Transactional' (unchecked). Global parameters are indicated for the module and function name fields.

### Secure Acceptance Profile Configuration into CyberSource Business Manager

Secure Acceptance profile settings are configured on CyberSource business center console; along with other settings below are key settings which must be configured in cybersource profiles in order to complete the checkout process successfully.

Profile name	Notification Section [Merchant post URL]
SA Redirect	[Merchant specific URL]/SECURE_ACCEPTANCE-MerchantPost
SA Iframe	[Merchant specific URL]/SECURE_ACCEPTANCE-MerchantPost
SA SilentPost	N/A

Only five types of Card are supported in Demanware, so the cards configured in cybersource payment settings should be in sync with Demandware supported cards

## Payment Method

To promote a profile to active, you must select at least one payment type and a currency.

### Card

Add or edit the card types that your merchant account provider has authorized. Click the edit icon to change the CVN Display, CVN Required, Payer Authentication, and Currencies settings.

Card Type	CVN Display	CVN Required	Payer Authentication	Currencies	
Visa	✓	✓	✓	USD	
MasterCard	✓	✓	✓	USD	
American Express	✓	✓	✓	USD	
Discover	✓	✓		USD	
Maestro (International)	✓	✓	✓	USD	

[Add/Edit Card Types](#)

### Automatic Authorization Reversal

Merchant Notifications POST URL card number digits supported option 2 as shown.

## Merchant Notifications

Select and enter the POST URL and/or email address you want the transaction data sent to.



Merchant POST URL

<https://cybersource05.tech-prtnr-na02.dw.demandware.com>



Merchant POST Email

Select the card number digits that you want displayed.

- Return card BIN (123456xxxxxxxxxxxx)
- Return last 4 digits of card number (xxxxxxxxxxxx1234)
- Return BIN and last 4 digits of card number (123456xxxxxx1234)

## Batch Job for IDEAL Bank Option

- Add new batch job to add merchant defined custom objects for bank options.
- Verify the newly added batch jobs for Ideal Bank Option service.  
Go to Administration -> Operations -> Job Schedules

The screenshot shows the 'Step Configurator' tab selected for the 'iDealBankOptionJob'. The configuration includes:

- Script Name:** int\_cybersource/cartridge/scripts/jobs/iDealBankOpt (Global Parameters)
- Function Name:** run (Global Parameters)
- Transactional:** checked (Global Parameters)
- Scope:** 2 Sites Assigned (Global Parameters)
  - Assigned Site:** call-cyb-option-service
- Timeout:** ExecuteScriptModule.TimeoutInSeconds (Global Parameters)
- Restart Enforced:** unchecked (Global Parameters)
- Custom Parameters:**

ID*	Value*	
merchantId	sapient_nitro_1	<span style="border: 1px solid #ccc; padding: 2px;">X</span>
merchantKey	0cjh7aTtZ9wb9y2m2cEFE	<span style="border: 1px solid #ccc; padding: 2px;">X</span>

## Unit Test Services

Use **CYBServicesTesting** pipeline to test all the services as follows:

CyberSource Services Test Suite is created to gives the facility to the user to execute any of the selected Test Service by providing requested Input and getting the response back on the same interface.

Below is the URL for CyberSource Test Suite:

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-StartServices>

## Services Test Suite

[Test CC Auth](#)  
[Test Tax](#)  
[Test Finger Print](#)  
[Test PA](#)  
[Test Alipay Initiate Service](#)  
[Test DAV Check](#)  
[Test POS](#)  
[Create Subscription](#)  
[View Subscription](#)  
[Update Subscription](#)  
[Delete Subscription](#)  
[Test Secure Acceptance Create Token](#)  
[Test On Demand Payment](#)  
[Test Sale Service](#)  
[Test PayPal Authorize Service](#)  
[Test Refund Service](#)  
[Test Cancel Service](#)  
[Test Capture Service](#)  
[Test Auth Reversal Service](#)  
[Test Check Status Service](#)

[Note: Mark the StartServices node as “PUBLIC” before executing the test case. This activity is common for all test interfaces. These services are only for testing purpose and not production ready]

## Authorize Credit Card

Use and modify the **CYBServicesTesting -TestCCAuth** pipeline and associated scripts and sub-pipelines. The end node of the unit test pipeline is a template which displays all relevant request/response information in an easy to digest manner. User can change static credit card and address data to observe various responses.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestCCAuth>

## Tax Service

Use and modify the **CYBServicesTesting -TestTax** pipeline and associated scripts and sub-pipelines. The script nodes for creating CreateCybersourceShipTo and CreateCybersourceBillTo objects have bindings to produce valid results, but otherwise can be manually modified to test against any domestic or international address.

The end node of the unit test pipeline for taxes is a template which displays all relevant request/response information in an easy to digest manner, to aid the debugging the various response codes and corrected address response.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestTax>

## Address Verification Service (AVS)

Use and modify the **CYBServicesTesting -TestCCAuth** pipeline and associated scripts and sub-pipelines. By running simplified payment authorizations with different site preferences set, you can see how the AVS process works and how that result affects the overall payment authorization process.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestCCAuth>

## Delivery Address Verification Service (DAV)

To test stand-alone DAV service, use and/or modify **CYBServicesTesting -TestDAVCheck** pipeline and associated scripts and sub-pipelines. Like other test pipelines, test data can be customized to simulate various situations that need to be handled.

The end node of the unit test pipeline for the stand-alone DAV Service is a template which displays all relevant request/response information in an easy to digest manner, to aid the debugging the various response codes and corrected address response.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestDAVCheck>

## Payment Tokenization

Use the **CYBServicesTesting-StartSubscription** pipeline to start Subscription creation test suite. By entering test data you can use the various Payment Tokenization related services like Create Subscription, View Subscription, Update Subscription, Delete Subscription, Use Subscription for One Time Payment.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-StartSubscription>

## Device Fingerprint

Call the pipeline **CYBServicesTesting -TestFingerprint** to test the device Fingerprint Service. A CreditCard Authorization is done and a device fingerprint will be additionally submitted.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestFingerprint>

## Payer Authentication

Call the pipeline **CYBServicesTesting -TestPA** to test the Payer Authentication Service.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestPA>

## Retail POS Authorization Request

Call the pipeline **CYBServicesTesting-StartPOS** to test the retail POS Service. This renders a template with a form containing various request fields to enter/select values. The service response is shown after the submit button is clicked. The field's label turns to red colored font if the field was mandatory.  
<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-StartPOS>

## Alipay Initiate Request

Call the pipeline **CYBServicesTesting-TestAlipayInitiateService** to test Alipay Initiate request. Use and modify the mentioned pipeline and associated scripts to test initiate request. The end node of the unit test pipeline is a template which displays all relevant request/response information in an easy to digest manner. User can change static purchase object data and payment type to observe various responses.  
<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestAlipayInitiatesService>

## Create Subscription Request

Call the pipeline **CYBServicesTesting-CreateSubscription** to test Create Subscription request. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter the dummy values printed below the form. Once the correct information is submitted, the result will be displayed.  
<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-CreateSubscription>

## View Subscription Request

Call the pipeline **CYBServicesTesting-ViewSubscription** to test View Subscription request. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter a valid subscription ID. Once the correct information is submitted, the result will be displayed.  
<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-ViewSubscription>

## Update Subscription Request

Call the pipeline **CYBServicesTesting-UpdateSubscription** to test Create Subscription request. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter the dummy values printed below the form. Once the correct information is submitted, the result will be displayed.  
<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-UpdateSubscription>

## Delete Subscription Request

Call the pipeline **CYBServicesTesting-CreateSubscription** to test Create Subscription request. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter a valid subscription ID. Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-DeleteSubscription>

## On Demand Payment Request

Call the pipeline **CYBServicesTesting-OnDemandPayment** to test On Demand Payment request. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter a valid subscription ID with the amount. Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-OnDemandPayment>

## Check Status Request

Call the pipeline **CYBServicesTesting-TestCheckStatusService** to test Check Status request for Klarna, BanContact, EPS, Giropay, Ideal and Sofort. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter Merchant Reference number, requestID, amount, currency and select the APM from dropdown menu. Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestCheckStatusService>

## Capture Request

Call the pipeline **CYBServicesTesting-TestCaptureService** to test Capture request for PayPal, Klarna, Credit Card and Visa Checkout. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter Merchant Reference number, requestID, amount, currency and select the APM from dropdown menu. Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestCaptureService>

## Auth Reversal Request

Call the pipeline **CYBServicesTesting-TestAuthReversalService** to test Auth reversal request for PayPal, Klarna, Credit Card. The end node of the unit test pipeline is a template which displays all relevant request/response information. User will be presented with a form and needs to enter

Merchant Reference number,requestID,amount,currency and select the APM from dropdown menu.Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestAuthReversalService>

## Sale Request

Call the pipeline **CYBServicesTesting-TestSaleService** to test Sale request for PayPal. The end node of the unit test pipeline is a template which displays all relevant request/response information.User will be presented with a form and needs to enter Merchant Reference number,requestID,amount,currency and enter the APM name. Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestSaleService>

## Authorize Request

Call the pipeline **CYBServicesTesting-TestAuthorizeService** to test Authorize request for PayPal. The end node of the unit test pipeline is a template which displays all relevant request/response information.User will be presented with a form and needs to enter Merchant Reference number,requestID,amount,currency and enter the APM name.Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestAuthorizeService>

## Refund Request

Call the pipeline **CYBServicesTesting-TestRefundService** to test Refund request for PayPal,Klarna,Bancontact,Sofort and, IDEAL. The end node of the unit test pipeline is a template which displays all relevant request/response information.User will be presented with a form and needs to enter Merchant Reference number,requestID,amount,currency and select the APM from dropdown menu.Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestRefundService>

## Cancel Request

Call the pipeline **CYBServicesTesting-TestCancelService** to test Cancel request for PayPal. The end node of the unit test pipeline is a template which displays all relevant request/response information.User will be presented with a form and needs to enter Merchant Reference number,requestID and enter the APM name.Once the correct information is submitted, the result will be displayed.

<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestCancelService>

## Secure Acceptance Web / Mobile Create Token Request

Before TESTING please complete the profile setup for service to work refer section **Secure Acceptance profile setup** for more details

Call the pipeline **CYBServicesTesting-TestSATokenCreate** to test the secure acceptance redirect create token Service. This renders a secure acceptance hosted page at cybersource having details of card options to choose to enter/select values. The service response is shown after the pay button is clicked. The field's label turns to red colored font if the field was mandatory. The response arrived to pipeline CYBServicesTesting-TestSATokenCreateResponse which displays the service result fields.  
<https://<Sandbox Name>/on/demandware.store/Sites-SiteGenesis-Site/default/CYBServicesTesting-TestSATokenCreate>

## Apple Pay

### How to test on Demandware storefront

To test Apple Pay interface on Demandware site, following files need to be updated:

#### Pipeline – BASIC\_CREDIT.XML

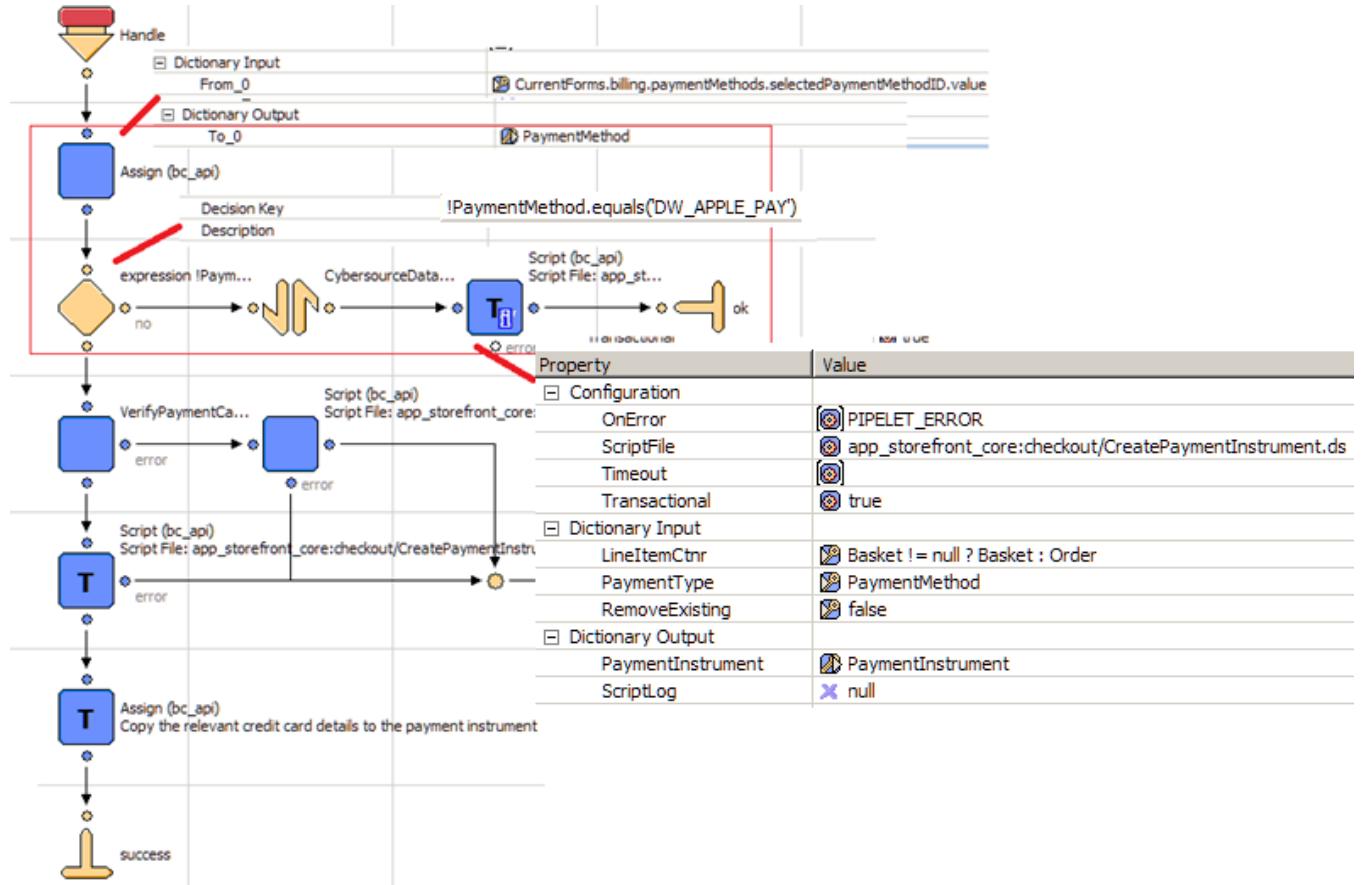
Update handle node to handle Apple pay payment method

1. Add assign node and set “PaymentMethod” as  
`CurrentForms.billing.paymentMethods.selectedPaymentMethodID.value`
2. Add decision node with condition `!PaymentMethod.equals('DW_APPLE_PAY')` , if false add call node to remove existing payment instrument `CybersourceData-RemovePaymentInstrument`
3. Add script node `appp_storefront_core:checkout/CreatePaymentInstrument.ds` with input :
 

<code>LineItemCtnr</code>	<code>Basket != null ? Basket : Order</code>
<code>PaymentType</code>	<code>PaymentMethod</code>
<code>RemoveExisting</code>	<code>true</code>

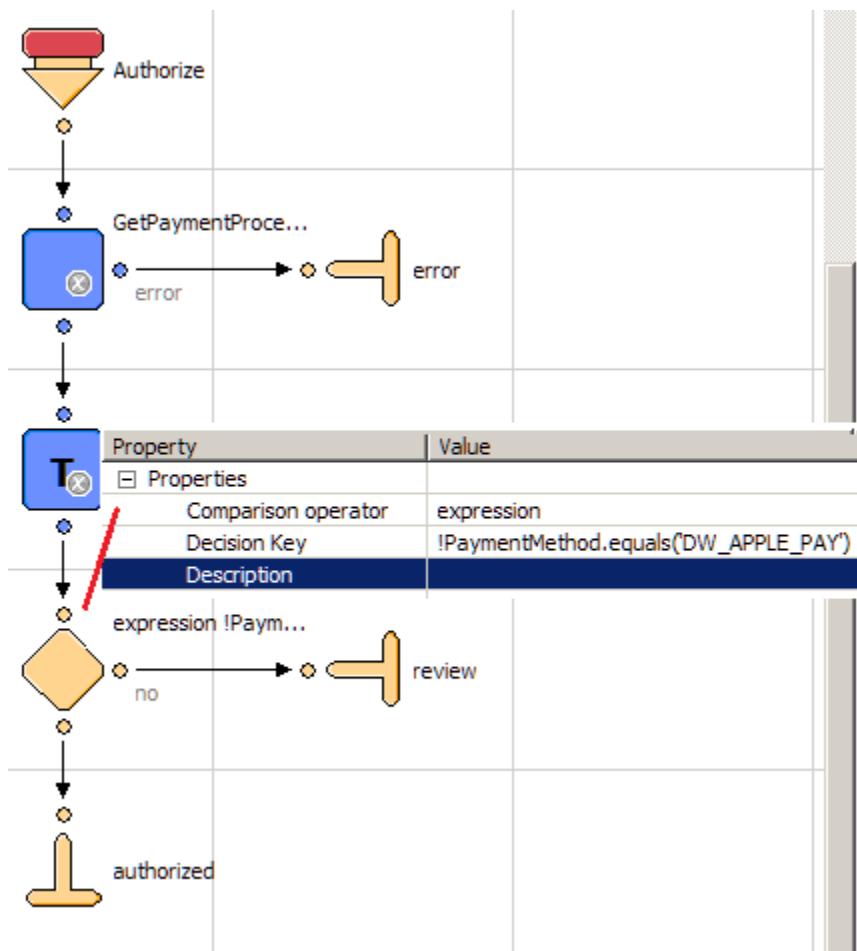
 And Output:
 

<code>PaymentInstrument</code>	<code>PaymentInstrument</code>
--------------------------------	--------------------------------
4. IF step 2 is true continue with the existing flow



### Update Authorize node

Add a decision node with condition as `!PaymentMethod.equals('DW_APPLE_PAY')` above end node to check if existing payment method is apply pay then add new end node with review status



## Rest Interface Testing

The Interface can be tested via any REST client like SOAPUI etc. Below are the steps to test the REST service

1. Install the REST client on machine or browser
2. Hit the secure End Point URL as POST request having merchant site URL for "Cybersource\_ApplePay-Authorize" [example: [https://<merchant sandbox>/on/demandware.store/Sites-<merchant site>-Site/default/Cybersource\\_ApplePay-Authorize](https://<merchant sandbox>/on/demandware.store/Sites-<merchant site>-Site/default/Cybersource_ApplePay-Authorize)]
3. Add key-value pairs in header for credentials

HEADER KEY	HEADER VALUE
dw_applepay_user	User is configured by merchant in demandware platform under site preferences
dw_applepay_password	Password is configured by merchant in demandware platform under site preferences. Further the password to be base64 encode before passing to REST interface

<b>Content-Type</b>	application/json
---------------------	------------------

4. Pass below JSON when Payload test data available

<b>JSON KEY</b>	<b>JSON VALUE</b>
orderId	The order ID of Apple Pay order object created during checkout journey of Apple Pay
encryptedPaymentBlob	Encrypted Apple Pay blob data returned by Apple Pay for PSP to place the order. This contains billing/shipping/card details in encrypted form.

5. Pass below JSON when Network Token test data available

<b>JSON KEY</b>	<b>JSON VALUE</b>
orderId	The order ID of Apple Pay order object created during checkout journey of Apple Pay
networkToken	Network Token returned by Apple Pay for PSP authorization (Max length 20 character)
cardType	Card Type returned by Apple Pay for PSP authorization. Supported types visa/mastercard/amex
tokenExpirationDate	Network Token Expiration Date returned by Apple Pay for PSP authorization. Format YYMMDD
Cryptogram	Cryptogram encoded form (max length 40 character)

6. Test the Success response JSON

<b>JSON KEY</b>	<b>JSON VALUE</b>
TRANSACTION_RESULT	Below json key-value pairs
DECISION	Possible values ACCEPT   REVIEW   REJECT   ERROR   CANCEL
REASON_CODE	ReasonCode
REQUEST_ID	RequestID
REQUEST_TOKEN	RequestToken
AUTHORIZATION_AMOUNT	AuthorizationAmount
AUTHORIZATION_CODE	AuthorizationCode
AUTHORIZATION_REASON_CODE	AuthorizationReasonCode
DAV_REASON_CODE	DAVReasonCode
RAW_SERVICE_RESPONSE	Entire service response in form of JSON

7. Test the Validation/Failure response JSON

<b>JSON KEY</b>	<b>JSON VALUE</b>
ERROR_CODE	Validation failure error code of interface
ERROR_MSG	Validation failure message of interface

**Sample Apple Pay Interface JSON Request /Response format:**

Interface 1: Request with network Token and Cryptogram data:

The screenshot shows a REST API testing interface. At the top, there's a URL bar with the address [https://cybersource09.tech-prtnr-na07.dw.demandware.net/s/SiteGenesis/CYBApplePay-Authorize?lang=en\\_US](https://cybersource09.tech-prtnr-na07.dw.demandware.net/s/SiteGenesis/CYBApplePay-Authorize?lang=en_US). Below the URL are method selection buttons (GET, POST, PUT, DELETE, PATCH) and dropdowns for 'Other methods' and 'application/json'. There are also tabs for 'Raw headers', 'Headers form', 'Headers sets', and 'Variables'. The 'Raw headers' tab is selected, showing three entries: 'Content-Type: application/json', 'dw\_applepay\_user: test', and 'dw\_applepay\_password: test'. The 'Raw payload' tab is also selected, displaying a JSON object:

```
{
  "orderID": "00005602",
  "networkToken": "4111111111111111",
  "tokenExpirationDate": "210901",
  "cardType": "Visa",
  "cryptogram": "01C798FA280004FB378DDC0D6838373000020000"
}
```

On the right side, there's a 'Variables' section with a green 'A' icon and a value of '80 bytes'. At the bottom right is a blue 'SEND' button.

## Android Pay

### How to test on Demandware server

To test Android Pay interface on Demandware site, following files need to be updated:

#### Pipeline – BASIC\_CREDIT.XML

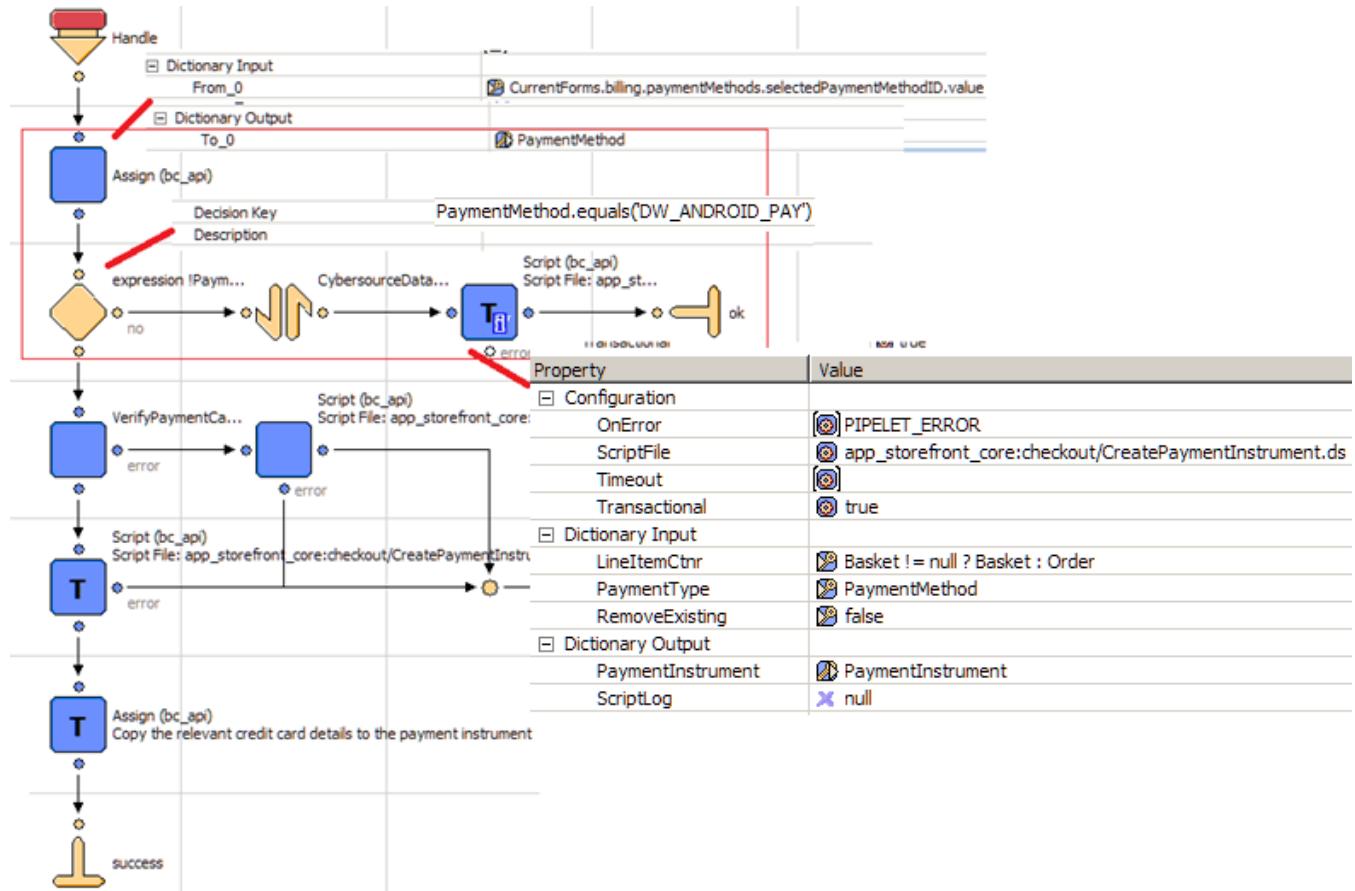
Update handle node to handle Android Pay payment method

1. Add assign node and set “PaymentMethod” as CurrentForms.billing.paymentMethods.selectedPaymentMethodID.value
2. Add decision node with condition !PaymentMethod.equals('DW\_ANDROID\_PAY') , if false add call node to remove existing payment instrument CybersourceData-RemovePaymentInstrument
3. Add script node appp\_storefront\_core:checkout/CreatePaymentInstrument.ds with input :
 

LineItemCtnr	Basket != null ? Basket : Order
PaymentType	PaymentMethod
RemoveExisting	false

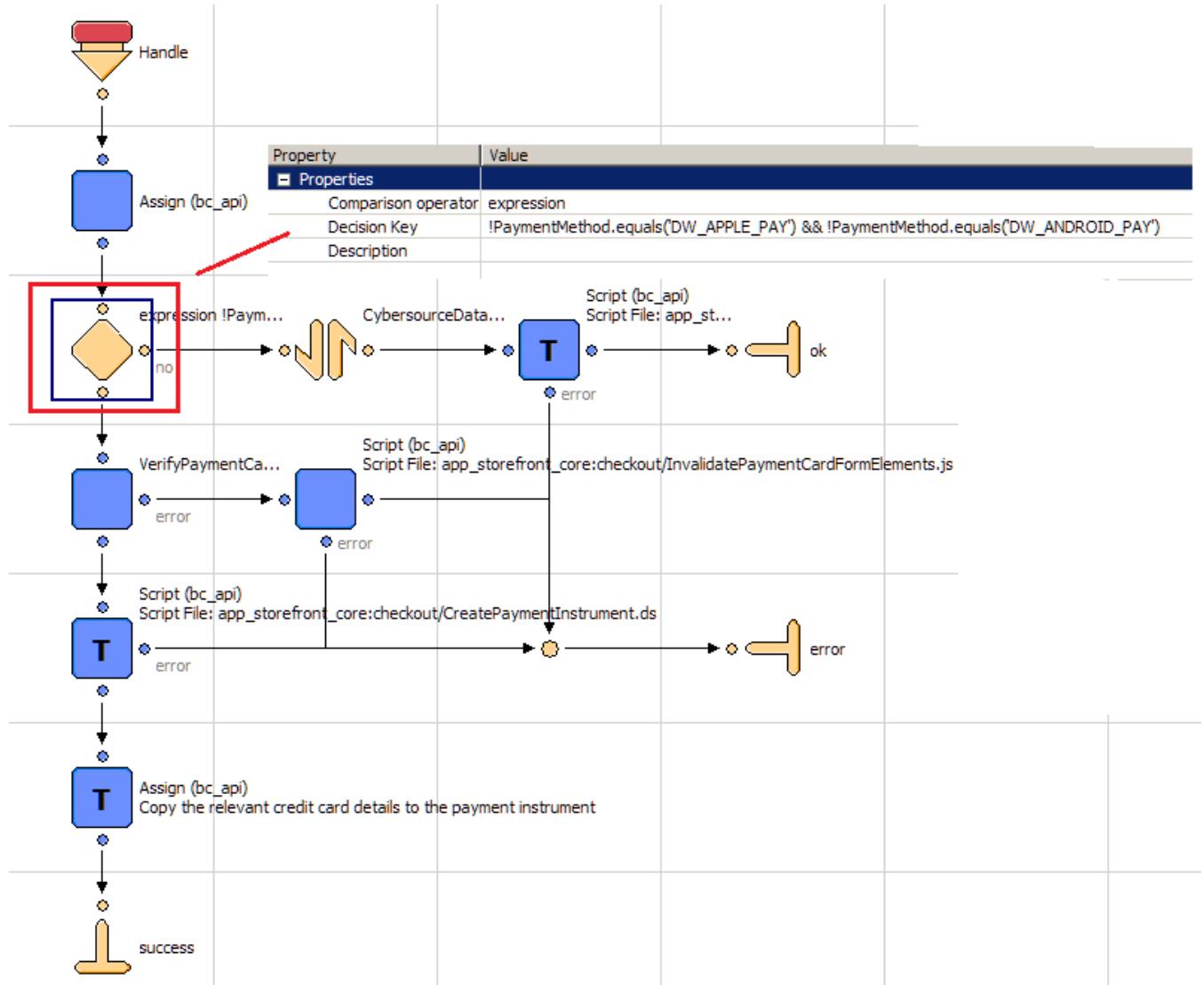
 And Output:
 

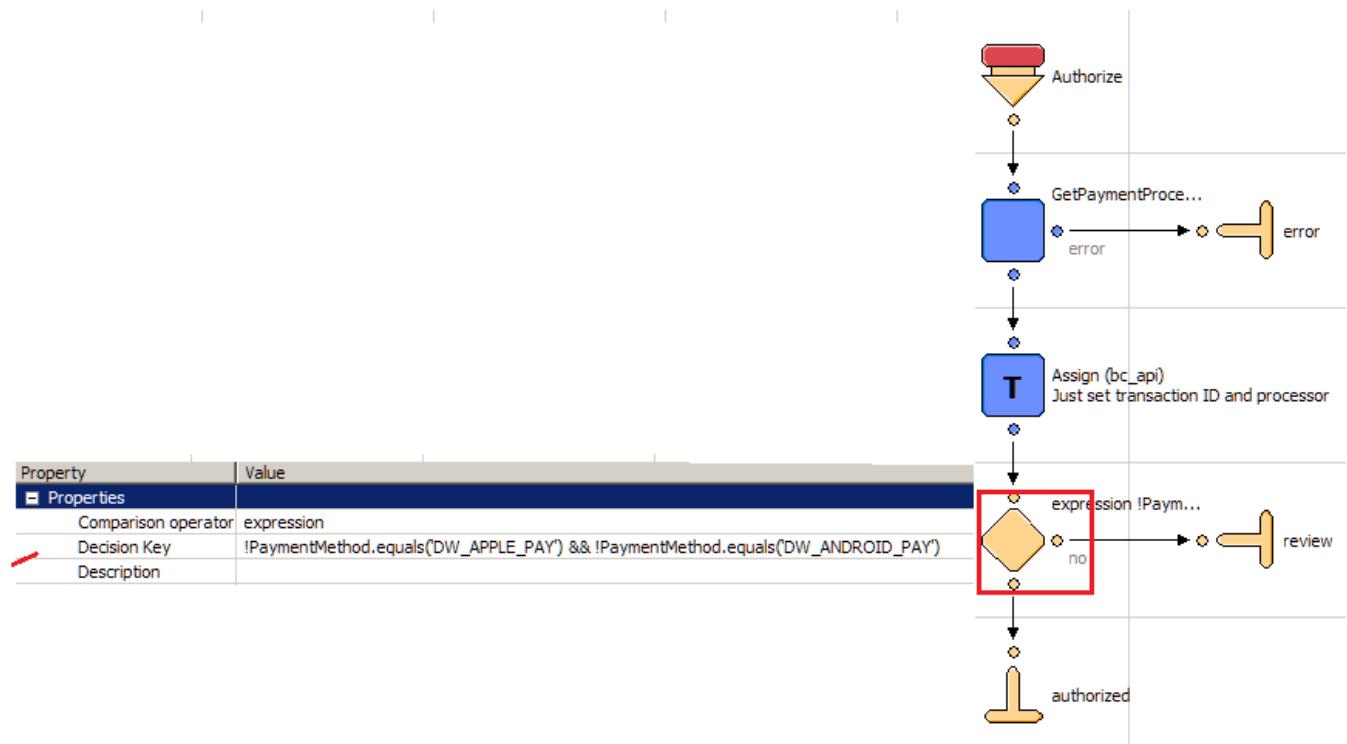
PaymentInstrument	PaymentInstrument
-------------------	-------------------
4. IF step 2 is true continue with the existing flow



[Note: If user want to integrate Apple Pay and Android Pay both in same flow , use below condition in expression node of BASIC\_CREDIT-Handle and BASIC\_CREDIT-Authorize]

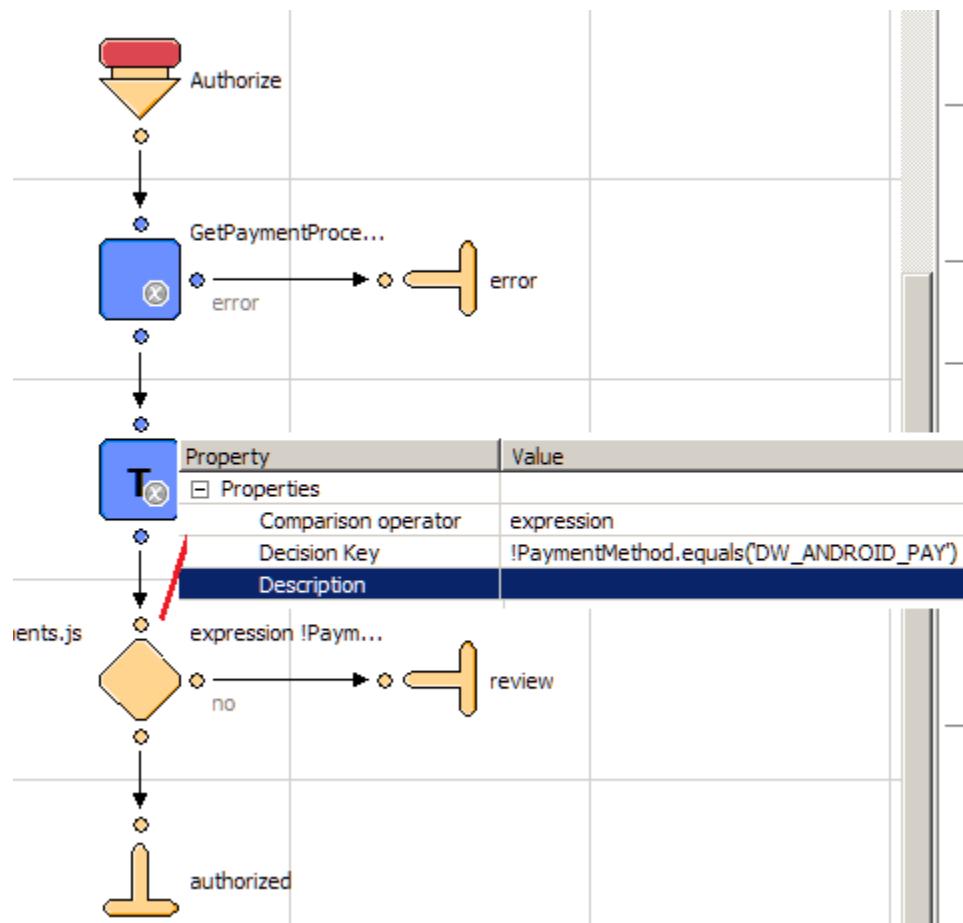
`!PaymentMethod.equals('DW_APPLE_PAY') && !PaymentMethod.equals('DW_ANDROID_PAY')`





### Update Authorize node

Add a decision node with condition as `!PaymentMethod.equals('DW_ANDROID_PAY')` above end node to check if existing payment method is apply pay then add new end node with review status



## Rest Interface Testing

The Interface can be tested via any REST client like SOAPUI etc. Below are the steps to test the REST service

8. Install the REST client on machine or browser
9. Hit the secure End Point URL as POST request having merchant site URL for "Cybersource\_ApplePay-Authorize" [example: [https://<merchant sandbox>/on/demandware.store/Sites-<merchant site>-Site/default/Cybersource\\_ApplePay-Authorize](https://<merchant sandbox>/on/demandware.store/Sites-<merchant site>-Site/default/Cybersource_ApplePay-Authorize)]
10. Add key-value pairs in header for credentials

HEADER KEY	HEADER VALUE
<code>dw_androidpay_user</code>	User is configured by merchant in demandware platform under site preferences
<code>dw_androidpay_password</code>	Password is configured by merchant in demandware platform under site preferences.
<code>Content-Type</code>	<code>application/json</code>

11. Pass below JSON when Payload test data available

JSON KEY	JSON VALUE
orderID	The order ID of Android Pay order object created during checkout journey of Apple Pay
encryptedPayment Blob	Encrypted Android Pay blob data returned by Apple Pay for PSP to place the order. This contains billing/shipping/card details in encrypted form.

12. Pass below JSON when Network Token test data available

JSON KEY	JSON VALUE
orderId	The order ID of Android Pay order object created during checkout journey of Apple Pay
networkToken	Network Token returned by Android Pay for PSP authorization (Max length 20 character)
cardType	Card Type returned by Android Pay for PSP authorization. Supported types visa/mastercard/amex
tokenExpirationDate	Network Token Expiration Date returned by Android Pay for PSP authorization. Format YYMMDD
cryptogram	Cryptogram encoded form (max length 40 character)

13. Test the Success response JSON

JSON KEY	JSON VALUE
TRANSACTION_RESULT	Below json key-value pairs
DECISION	Possible values ACCEPT   REVIEW   REJECT   ERROR   CANCEL
REASON_CODE	ReasonCode
REQUEST_ID	RequestID
REQUEST_TOKEN	RequestToken
AUTHORIZATION_AMOUNT	AuthorizationAmount
AUTHORIZATION_CODE	AuthorizationCode
AUTHORIZATION_REASON_CODE	AuthorizationReasonCode
SUBSCRIPTION_ID	Subscription id in case of tokenization is enabled in BM
DAV_REASON_CODE	DAVReasonCode
RAW_SERVICE_RESPONSE	Entire service response in form of JSON

14. Test the Validation/Failure response JSON

JSON KEY	JSON VALUE
ERROR_CODE	Validation failure error code of interface
ERROR_MSG	Validation failure message of interface

#### Sample Android Pay Interface JSON Request /Response format

Interface 1: Request with network Token and Cryptogram data:

> https://cybersource09.tech-prtnr-na07.dw.demandware.net/s/SiteGenesis/CYBAndroidPay-Authorize?lang=en\_US

The screenshot shows a POST request configuration:

- Method:** POST
- Content-Type:** application/json
- Headers:**
  - Content-Type: application/json
  - dw\_androidpay\_user: test
  - dw\_androidpay\_password: test
- Raw payload:**

```
{
  "orderID": "00005223",
  "networkToken": "37828224631005",
  "tokenExpirationDate": "210901",
  "cardType": "amex",
  "cryptogram": "01C798FA280004FB378DDC0D6838373000020000"
}
```
- Size:** 84 bytes
- Buttons:** SEND

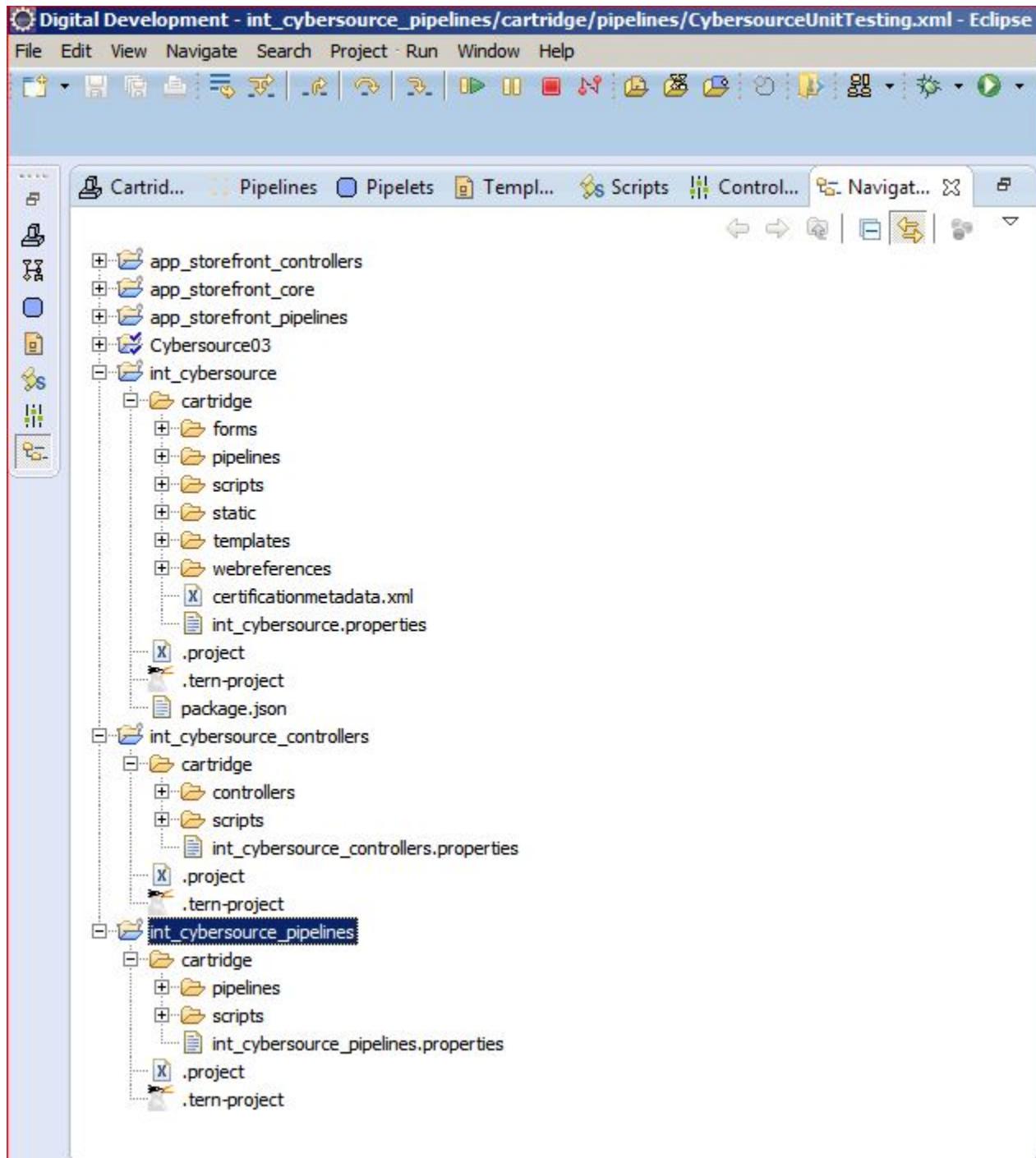
## Interface2: Request with encrypted payment BLOB data.

The screenshot shows a POST request configuration:

- Method:** POST
- Content-Type:** application/json
- Headers:**
  - Content-Type: application/json
  - dw\_androidpay\_user: test
  - dw\_androidpay\_password: test
- Raw payload:**

```
{
  "orderID": "00004785",
  "encryptedPaymentBlob": "ewoJInB1YmxpY0tleUhfc2giICAgiDogImVja1VWTkFnUGZwbFlUS3hEZE4vbUtzRGx2b05hOU9Hwjc2UzY3c3FEcG9I:"
}
```
- Size:** 84 bytes
- Buttons:** SEND

# Cartridges Structure and Reference



# Typical Project Plan

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## Roles, Responsibilities

Typically most of the integration works is done by the backend developer. We expect that the person doing this integration is familiar with the web service, xml processing and has hands on experience with the Demandware platform.

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## Typical Efforts and Timelines

The level of effort is mostly detected by the services merchant may choose from the CyberSource cartridge. The

CyberSource Service	Level of Effort (LOE)	Dependencies
Initial Cartridge Setup	<b>0.5– Person Day</b> List of tasks involved: <ul style="list-style-type: none"><li>• Add CyberSource Cartridges to the project</li><li>• Import Configuration files as specified in configuration section</li></ul>	<ul style="list-style-type: none"><li>• Cartridge is available</li></ul>
Authorize Credit Card	<b>0.5– Person Day</b> List of tasks involved: <ul style="list-style-type: none"><li>• Integrate CyberSource-AuthorizeCreditCard Pipeline with COPlaceOrder.</li></ul>	<ul style="list-style-type: none"><li>• Merchant ID and Key is established for the client.</li><li>• Site Preferences for authorization configured with above ID and Key.</li></ul>
Device Fingerprint (as addition to Authorize Credit Card)	<b>0.5 Person Day</b>	<ul style="list-style-type: none"><li>• Enable Device Fingerprint, set Organization ID</li><li>• Add include at billing page.</li></ul>
Address Verification Service (AVS)*	<b>0.5– Person Day</b>	<ul style="list-style-type: none"><li>• Initial Cartridge Setup</li></ul>
Delivery Address Verification (DAV)*	<b>0.5– Person Day</b>	<ul style="list-style-type: none"><li>• Initial Cartridge Setup</li></ul>

Decision Manager	<b>0.5– Person Day</b>	<ul style="list-style-type: none"> <li>• Access to Decision Manager.</li> <li>• Business rules are defined.</li> <li>• Order status notification URL pointing to Cybersource-NewDecision is defined.</li> </ul>
Payment Tokenization*	<b>0.5– Person Day</b> + Depends on customization needs	<ul style="list-style-type: none"> <li>• Initial Cartridge Setup</li> </ul>
Payer Authentication	<b>1.5– Person Day</b>	<ul style="list-style-type: none"> <li>• Initial Cartridge setup</li> <li>• Update CoPlaceOrder-HandlePayments</li> <li>• Handle error scenarios in merchant specific ways</li> </ul>
Alipay Integration on Payment Page	<b>1.0– Person Day</b>	<ul style="list-style-type: none"> <li>• Initial Cartridge setup</li> <li>• Update CoPlaceOrder-HandlePayments</li> <li>• Handle error scenarios in merchant specific ways</li> </ul>
Visa Checkout	<b>0.5– Person Day</b> List of tasks involved: Integrate VISACHECKOUT Pipeline and merchant site specific button injection on minicart, cart and billing page.	<ul style="list-style-type: none"> <li>• Merchant ID and Key is established for the client.</li> <li>• Visa checkout account setup required</li> <li>• Site Preferences for authorization configured with above ID and Key.</li> </ul>
Apple Pay	<b>2– Person Day</b> List of tasks involved: Choose and decide the integration mechanism with applepay interface.	<ul style="list-style-type: none"> <li>• Site Preferences for header authentication exposed.</li> </ul>
Secure Acceptance (Redirect/Iframe/Silent post)	<b>0.5– Person Day (1 out of 3 methods)</b> List of tasks involved:	<ul style="list-style-type: none"> <li>• Cartridge setup</li> <li>• Configure profile and URL in Cybersource</li> </ul>

	Integrate SECURE_ACCEPTANCE Pipeline	<ul style="list-style-type: none"> <li>Site preference configuration in Demandware Business manager</li> <li>config</li> </ul>
Klarna	<b>0.5 - Person Day</b> Integrate KLARNA_CREDIT pipeline, changes on billing and summary pages for Klarna	<ul style="list-style-type: none"> <li>Cartridge setup</li> <li>Site preference configuration in business manager</li> <li>Merchant Id and Key for specific country and currency</li> </ul>
Bank Transfer(SOFORT,BANCONTACT, EPS, GIROPAY, IDEAL)	<b>0.5 - Person Day</b> Integrate BANK_TRANSFER pipeline, changes for billing page for Bank Transfer to display BIC field or bank list	<ul style="list-style-type: none"> <li>Cartridge setup</li> <li>Site preference configuration in business manager</li> <li>Merchant Id and Key for IDEAL method</li> </ul>
PayPal(Express, credit, billing agreement)	<b>1- Person Day</b> Integrate PAYPAL_EXPRESS and PAYPAL_CREDIT pipeline, changes on mini cart, cart and billing pages	<ul style="list-style-type: none"> <li>Cartridge setup</li> <li>Site preference configuration in business manager</li> </ul>
Andriod Pay	<b>0.5 – Person Day</b> Integrate BASIC_CREDIT pipeline, changes on billing page	<ul style="list-style-type: none"> <li>Cartridge setup</li> <li>Site preference configuration in business manager</li> </ul>

\*Note that because customized user interface elements are completely dependent on merchant specification, the time required to interact with the customer to correct address information or confirm standardized address format corrections, is not included; only the time required to integrate with the web services is included, with minimal testing and simplified validation handling, i.e. Automatically make correction to a customer address, as per validation response.

## Pre-Production Steps

In order to avoid misuse of unit testing Pipeline methods on production instances we have made them Private, it is advised to make following **Pipeline Node as PUBLIC** before pushing code to production instances.

CYBServicesTesting-TestCCAuth

CYBServicesTesting- TestAlipayInitiateService  
CYBServicesTesting- TestAlipayCheckStatusService  
CYBServicesTesting- TestPaypalCaptureService  
CYBServicesTesting-TestTax  
CYBServicesTesting-TestDAVCheck  
CYBServicesTesting-TestPA  
CYBServicesTesting-TestFingerprint  
CYBServicesTesting -StartSubscription  
CYBServicesTesting -CreateSubscription  
CYBServicesTesting -ViewSubscription  
CYBServicesTesting -UpdateSubscription  
CYBServicesTesting -DeleteSubscription  
CYBServicesTesting -OnDemandPayment  
CYBServicesTesting-StartPOS  
CYBServicesTesting- TestSATokenCreate  
CYBServicesTesting- TestSaleService  
CYBServicesTesting- TestPayPalAuthorizeService  
CYBServicesTesting- TestRefundService  
CYBServicesTesting- TestCancelService  
CYBServicesTesting- TestAuthReversalService  
CYBServicesTesting- TestCheckStatusService

## Known Issues

1. In case of setting Ignore AVS Result custom preference to true, there can be a known issue as described below:  
If the AVS response code received as N, the cartridge ignores the ccAuthReply reason code and processes the transaction under “review” status. This can lead to an ambiguous situation when the Credit Card was rejected, but due to the AVS code as “N”, the cartridge continued with order processing and successful order placement.
2. Testing of Alipay is possible only with Test data provided by CyberSource such as Reconciliation ID that is getting passed to Alipay Initiate Service to get the response back. We don’t have Alipay simulator and access to Alipay live environment.
3. There is an issue with Klarna session and authorization service in accepting value of tax rate field upto 4 or more decimal places. Klarna service accepts only tax rate value upto 2 decimal points and service is returning REJECT decision if tax rate exceed 2 decimal places.

# CyberSource document links

1. [http://www.cybersource.com/support\\_center/implementation/testing\\_info/simple\\_order\\_api/General\\_testing\\_info/soapi\\_general\\_test.html](http://www.cybersource.com/support_center/implementation/testing_info/simple_order_api/General_testing_info/soapi_general_test.html)
2. [http://www.cybersource.com/support\\_center/support\\_documentation/quick\\_references/view.php?page\\_id=422](http://www.cybersource.com/support_center/support_documentation/quick_references/view.php?page_id=422)
3. [http://apps.cybersource.com/library/documentation/dev\\_guides/CC\\_Svcs\\_SO\\_API/Credit\\_Cards\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/CC_Svcs_SO_API/Credit_Cards_SO_API.pdf) - Page 163 - Appendix C.
4. [http://apps.cybersource.com/library/documentation/dev\\_guides/Getting\\_Started/Getting\\_Started\\_Advanced.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Getting_Started/Getting_Started_Advanced.pdf)
5. [http://www.cybersource.com/support\\_center/support\\_documentation/quick\\_references/](http://www.cybersource.com/support_center/support_documentation/quick_references/)
6. [http://apps.cybersource.com/library/documentation/dev\\_guides/Payer\\_Authentication\\_IG/20090928\\_Payauth\\_IG.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Payer_Authentication_IG/20090928_Payauth_IG.pdf)
7. [http://apps.cybersource.com/library/documentation/dev\\_guides/Payer\\_Authentication\\_IG/html/](http://apps.cybersource.com/library/documentation/dev_guides/Payer_Authentication_IG/html/)
8. [http://apps.cybersource.com/library/documentation/dev\\_guides/Verification\\_Svcs\\_IG/20091012\\_Verification\\_IG.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Verification_Svcs_IG/20091012_Verification_IG.pdf)
9. [http://www.cybersource.com/support\\_center/support\\_documentation/services\\_documentation/tax.php](http://www.cybersource.com/support_center/support_documentation/services_documentation/tax.php)
10. [http://apps.cybersource.com/library/documentation/dev\\_guides/Tax\\_IG/Tax\\_Guide.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Tax_IG/Tax_Guide.pdf)
11. [http://apps.cybersource.com/library/documentation/dev\\_guides/Retail\\_SO\\_API/Retail\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Retail_SO_API/Retail_SO_API.pdf)
12. [http://apps.cybersource.com/library/documentation/dev\\_guides/AliPayDom/AliPay\\_Dom\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/AliPayDom/AliPay_Dom_SO_API.pdf)
13. [http://apps.cybersource.com/library/documentation/dev\\_guides/AliPayInt/AliPay\\_Int\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/AliPayInt/AliPay_Int_SO_API.pdf)
14. [http://apps.cybersource.com/library/documentation/dev\\_guides/apple\\_payments/SO\\_API/Apple\\_Pay\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/apple_payments/SO_API/Apple_Pay_SO_API.pdf)
15. [http://apps.cybersource.com/library/documentation/dev\\_guides/Secure\\_Acceptance\\_WM/Secure\\_Acceptance\\_WM.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Secure_Acceptance_WM/Secure_Acceptance_WM.pdf)
16. [http://apps.cybersource.com/library/documentation/dev\\_guides/Secure\\_Acceptance\\_SOP/Secure\\_Acceptance\\_SOP.pdf](http://apps.cybersource.com/library/documentation/dev_guides/Secure_Acceptance_SOP/Secure_Acceptance_SOP.pdf)
17. [http://apps.cybersource.com/library/documentation/dev\\_guides/VCO\\_SO\\_API/Visa\\_Checkout\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/VCO_SO_API/Visa_Checkout_SO_API.pdf)
18. [http://apps.cybersource.com/library/documentation/dev\\_guides/apple\\_payments/getting\\_started/Getting\\_Start.pdf](http://apps.cybersource.com/library/documentation/dev_guides/apple_payments/getting_started/Getting_Start.pdf)
19. [http://apps.cybersource.com/library/documentation/dev\\_guides/tokenization\\_SO\\_API/Tokenization\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/tokenization_SO_API/Tokenization_SO_API.pdf)
20. [http://apps.cybersource.com/library/documentation/dev\\_guides/OnlineBankTransfers\\_SO\\_API/OnlineBankTransfers\\_SO\\_API.pdf](http://apps.cybersource.com/library/documentation/dev_guides/OnlineBankTransfers_SO_API/OnlineBankTransfers_SO_API.pdf)
21. [http://www.cybersource.com/support\\_center/support\\_documentation](http://www.cybersource.com/support_center/support_documentation)
22. <https://developer.paypal.com/docs/integration/direct/express-checkout/integration-javascript/>
23. <https://developer.paypal.com/demo/checkout/#/pattern/client>
24. [https://www.cybersource.com/products/payment\\_processing/android\\_pay/](https://www.cybersource.com/products/payment_processing/android_pay/)
25. [https://www.cybersource.com/developers/integration\\_methods/apple\\_pay/](https://www.cybersource.com/developers/integration_methods/apple_pay/)

# Release History

Version	Date	Changes
1.0.0.1	02/02/2010	Initial release
1.0.0.2	02/08/2010	Device Fingerprint Feature added
1.0.0.3	03/01/2012	Updated Tax pipeline to remove unnecessary / redundant tax requests to reduce tax service charges.
1.0.0.4	12/18/2012	Updated Tax pipeline to remove redundant tax requests by using SkipTaxCalculation parameter
1.1.0	01/16/2013	Incorporated review comments from Demandware team
1.1.0	02/06/2013	Incorporated New changes as per new Site Genesis code
2.0.0	09/23/2013	V.me support changes added. Removed deprecated method

		setGrossPrice for taxation
2.1.0	10/04/2013	V.me Clickjacking changes added
2.1.1	11/04/2013	Removed unused code from pipeline
2.1.2	04/25/2014	RSA key removed from the cartridge. Bug fixed related to promotional discount.
2.1.3	05/29/2014	Retail Point of Sale (POS) API added
14.2.1	08/04/2014	Document version updated
15.0	03/25/2015	Alipay, Paypal Express and Paypal implementation
15.1.0	04/15/2015	Changes done for Taxation service call and other Changes related to Credit Card and BML. V.me support changes and V.me Clickjacking changes removed.
16.1.0	05/30/2016	Changes done for pipeline AsWrapper to call pipeline flows, defects fixes and change request Removed V.me support
17.1	01/02/2017	Removed: <ul style="list-style-type: none"><li>• BML</li><li>• Removed PayPal Express support</li></ul> Added : <ul style="list-style-type: none"><li>• Visa Checkout</li><li>• Secure Acceptance Web/Mobile [Redirect/Iframe]</li><li>• Secure Acceptance Silent Order Post</li><li>• Apple Pay REST Interface</li></ul>
17.2	09/01/2017	Added : <ul style="list-style-type: none"><li>• Klarna</li><li>• 5 APM's under Bank Transfer</li><li>• PayPal Credit</li><li>• PayPal Express</li><li>• PayPal Credit</li><li>• PayPal Billing Agreement</li><li>• Andriod Pay</li><li>• Check Status Service job</li><li>• Ideal Option Job</li><li>• Cartridge structure changes<ul style="list-style-type: none"><li>○ File Name/Extension</li><li>○ Folder Structure</li></ul></li><li>• Removed/repurposed unwanted files</li></ul>
19.3.0	7/26/2019	Update 3DS to version 2.0, utilizing Cardinal Cruise.
19.3.4	11/19/2019	Klarna payment and replacing conversion detail report to REST
20.1.0	02/15/2020	No update to Pipeline cartridge.

