



# PayPal Integration Guide

FOR SALESFORCE COMMERCE CLOUD



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## 1 Summary

This Implementation Guide describes how to integrate **int\_paypal\_sfra** version 18.2.0 and **bm\_paypal** into Commerce Cloud reference application Store Front Reference Architecture (SFRA).

The **int\_paypal\_sfra** and **bm\_paypal** components support the following:

- PayPal Express Checkout from the Cart
- PayPal Express Checkout from the Payment page
- PayPal Credit
- Instant Payment Notification (IPN, which should be extended depending on your needs)
- In-Context checkout
- Reference Transactions
- Various standalone API calls

For more information, contact your PayPal support manager.

Integration of the cartridge into your storefront application does not imply modifications of core cartridge, SFRA approach of files overwriting should be used instead.

---

## 2 Component Overview

### 2.1 Supported Features

Express Checkout Mark and Express Checkout Shortcut support the following features:

- PayPal Credit Button and Banners
- Order, Authorization, and Capture
- Authorization and Capture
- Refund
- Void
- Line Item Details
- Pending Payments
- Reference Transactions
- In-Context checkout experience
- Mobile Express Checkout
- Billing Address Requests
- Ship to Store
- Address Override
- Foreign Currency

## 2.2 Functional Overview

The following diagram is a high-level view of the integration, which uses the general PayPal Express Checkout flow.

### 2.2.1 PayPal Express Checkout from Cart and Payment Page

PayPal Express Checkout allows users to check out from both the Shopping Cart and Billing pages. During Express Checkout, users are redirected to the PayPal login page. After authentication, the user is redirected to your website to continue the checkout process by selecting a shipping method and placing their order. A typical checkout process flow would include entering a shipping address, a billing address, and payment information. PayPal provides the shipping address in the Express Checkout flow.

Express Checkout makes it easier for buyers to pay online. It also enables you to accept PayPal while retaining control of the buyer and the overall checkout flow.

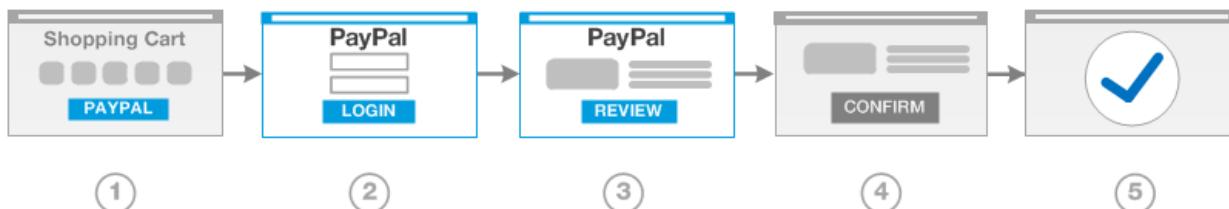


Figure 1. Express Checkout Flow

In the Express Checkout flow, the buyer:

1. Chooses Express Checkout by clicking **Checkout with PayPal**.
2. Logs into PayPal to authenticate their identity.
3. Reviews the transaction on PayPal.
4. Confirms the order and pays on your site.
5. Receives an order confirmation.

On mobile devices, Express Checkout provides payment pages tailored for faster checkout and for smaller mobile screens and keyboards.

To learn more about Express Checkout, see [NVP/SOAP Express Checkout](#) on the PayPal Developer Portal.

### 2.2.2 PayPal Credit

PayPal Credit is a reusable credit line available on purchases at thousands of stores that accept PayPal. It's currently available to merchants in the United States. It's available for purchases at thousands of other online stores. In addition, it comes with the same security and flexibility you trust from PayPal.

To learn more, see the [PayPal Credit home page](#).

### 2.2.3 In-Context Checkout from Cart and Payment Page

In-Context checkout keeps your website in view while providing customers with a streamlined and tightly-integrated checkout experience. The checkout experience takes place in the popup window (mini-browser).

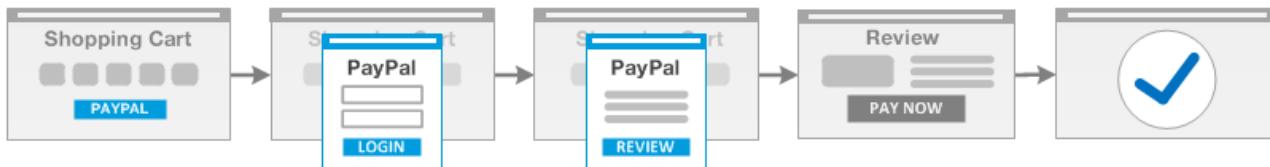


Figure 2. Express Checkout In-Context Flow

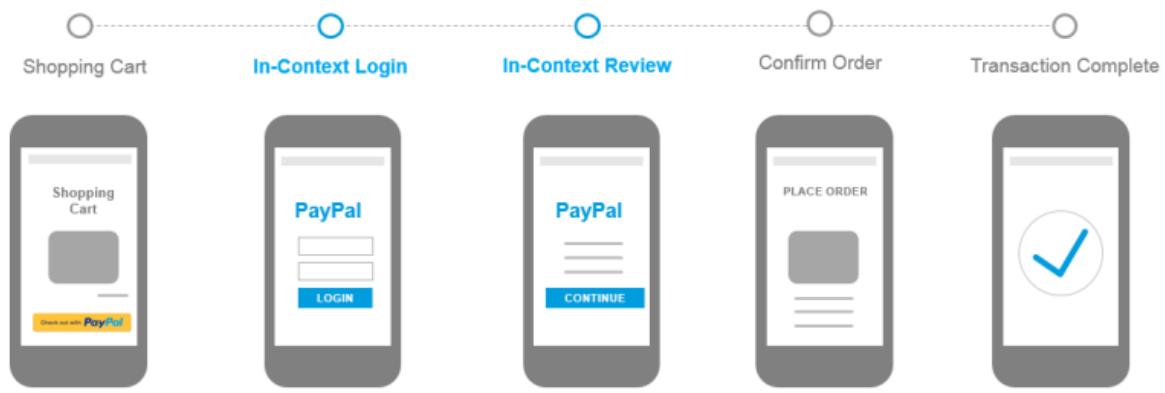
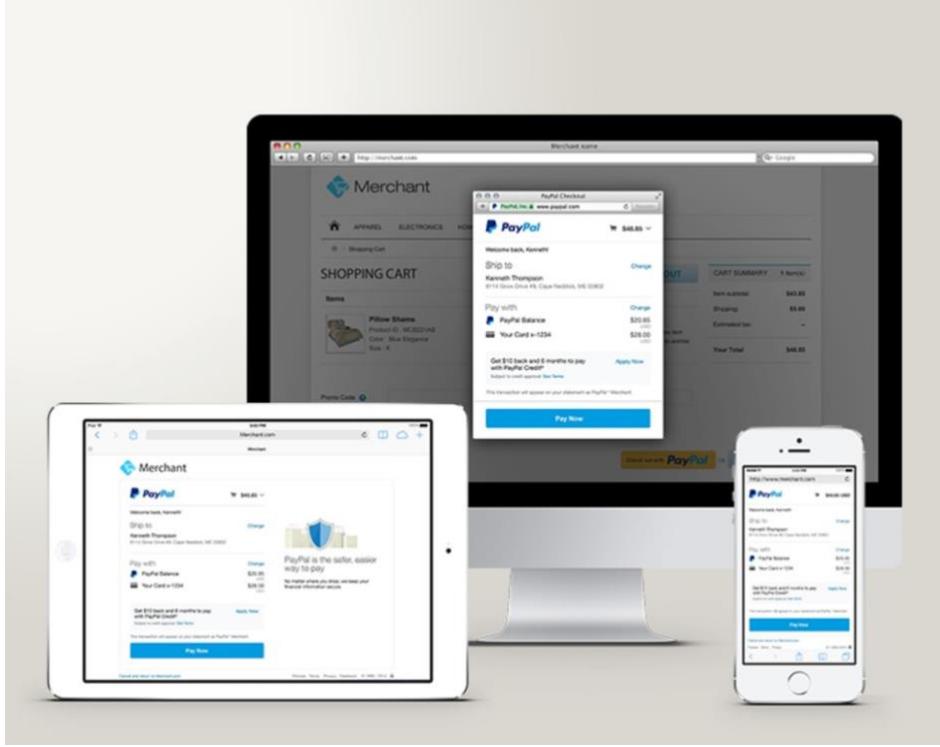


Figure 3. Mobile Flow – Displays a Mobile-optimized Full-page Checkout Window



*Figure 4. In-Context Checkout*

To learn more about In-Context Checkout, see [NVP/SOAP Integration](#).

#### 2.2.4 IPN

Instant Payment Notification (IPN) is a messaging service that notifies you of events related to PayPal transactions. You can use IPN messages to automate Business Manager and administrative functions, such as fulfilling orders, tracking customers, or providing status and other transaction-related information.

The current implementation of IPN affects Order Payment Transaction custom attributes that indicate PayPal payment status and transaction history. You can extend IPN functionality by adding a new method to the **Ipnp.js** controller.

Refer [here](#) for more details about IPN feature.

#### 2.2.5 Reference Transactions

The PayPal Billing Agreement (Reference Transactions) feature helps customers to pay more quickly. This feature allows buyers to accept a Billing Agreement for future payments. If a buyer accepts Billing Agreements with your site, they can check out without redirection to PayPal, both from the Cart and Billing page.

To learn more, see [Reference transactions](#).

#### 2.2.6 Stand-alone API Calls

The `int_paypal_sfra/bm_paypal` cartridge provides various classic API calls, such as **DoAuthorization**, **DoCapture**, **DoVoid**, **GetTransactionDetails**, and so on. PayPal API version 121.0 is used.

## *2.3 Use Cases*

PayPal has developed the following use cases for the int\_paypal\_sfra/bm\_paypal cartridge:

- Express Checkout from Cart.
- Express Checkout from the Payment page.
- PayPal Credit from the Cart.
- PayPal Credit from Payment page.
- In-Context Checkout from the Cart.
- In-Context Checkout from the Payment Page.
- Accept Billing Agreement with Reference Transactions.
- Use Billing Agreements through checkout.

## *2.4 Headings and Constraints*

The int\_paypal\_sfra/bm\_paypal cartridge doesn't support the multi-shipping functionality in Store Front Reference Architecture (SFRA).

## *2.5 Compatibility*

The int\_paypal\_sfra/bm\_paypal cartridge has been available since Commerce Cloud version 18.1.

The cartridge is presented as a LINK integration solution for Store Front Reference Architecture (SFRA) v2, what implies absence of any modifications into the storefront cartridge code.

## *2.6 Privacy and Payment*

This integration requires access to the following customer data elements: Billing Address, Shipping Address, Order Details, Customer Profile and some custom properties of Customer Payment Instruments.

---

# *3 Implementation Guide*

## *3.1 Setup*

Two cartridges support this integration:

1. **int\_paypal\_sfra** – Commerce Cloud storefront extension cartridge
2. **bm\_paypal** – Business Manager extension “PayPal Transactions” cartridge

The following sub-sections describe the entry points for the integration.

### 3.1.1 PAYPAL Payment Processor Script

`int_paypal_sfra/cartridge/scripts/hooks/payment/processor/paypal.js` provides the Payment Processor interface to Commerce Cloud for PayPal Express Checkout or PayPal Credit features. It's used for the SFRA payment processor mechanism.

This controller contains common Handle and Authorize methods (start nodes), and is called through the payment flow in the SFRA CheckoutServices controller.

### 3.1.2 IPN-Listener Controller Method

This is used for listening incoming Instant Payment Notifications.

## 3.2 Configuration

To integrate PayPal Express, PayPal Credit or Instant Payment Notifications, you need to add `int_paypal_sfra` to your target site cartridge path.

To integrate PayPal Transactions Business manager extension, you need to add the `bm_paypal` and `int_paypal_sfra` cartridges to your Business Manager cartridge path.

### 3.2.1 Installing the Cartridge

Here's how:

1. Upload `int_paypal_sfra` and `bm_paypal` to your CI or development sandbox. Apply the standard flow used to upload cartridges to your environment.
2. Upload and import metadata from the metadata folder. To do so, go to **Business Manager > Administration > Site Development > Site Import & Export**. Then apply the standard procedure for uploading metadata into the Commerce Cloud site. You can compress metadata to a .zip archive (Figure 5) or upload it via XML files and import it separately.

The screenshot shows the 'Site Import & Export' page in the Business Manager. The 'Import' section has a red box around the 'metadata.zip' file in the list. The 'Export' section is below it.

Figure 5. Metadata .zip Archive

3. Insert `int_paypal_sfra` into the cartridge path of a target site. To do so, go to **Business Manager > Administration > Sites > Manage Sites > Your Target Site > Settings** and

insert **int\_paypal\_sfra** before your cartridges record, as shown in Figure 6. (For example, int\_paypal\_sfra:app\_storefront\_core)

Instance Type: All	
Cartridges:	<input type="text" value="int_paypal_sfra:app_storefront_base"/>
Effective Cartridge Path:	int_paypal_sfra:app_storefront_base:plugin_apple_pay:plugin_facebook:plugin_pinterest_commerce:plugin_web_payments:core

Figure 6. Store Front Reference Architecture (SFRA)Path with **int\_paypal\_sfra**

4. Optionally, if you need to integrate Business Manager Extension PayPal Transactions, insert **int\_paypal\_sfra** and **bm\_paypal** into the record of the Business Manager cartridge path. To do so, in Commerce Cloud go to **Business Manager > Administration > Sites > Manage Sites >Manage the Business Manager Site > Settings** and insert **bm\_paypal:int\_paypal\_sfra** before your cartridges record. (See Figure 7.)

Instance Type: All	
Cartridges:	<input type="text" value="bm_paypal:int_paypal_sfra"/>
Effective Cartridge Path:	app_business_manager:plugin_apple_pay:plugin_facebook:plugin_pinterest_commerce:plugin_web_pay

Figure 7. Business Manager Cartridge Path, Updated

### 3.2.2 Adding API Credentials

After installing the cartridge, you need to configure service and update PayPal credentials (your API Signature and API Certificate). Here's how:

1. Go to **Business Manager > Administration > Operations > Services > Credentials**. Following recommended credentials objects may be listed to distinguish various types of authorization that can be applied to int\_paypal\_sfra/bm\_paypal:
  - PayPal\_Sandbox\_Certificate\_Credentials\_MobileFirst
  - PayPal\_Production\_Certificate\_Credentials\_MobileFirst
  - PayPal\_Sandbox\_Signature\_Credentials\_MobileFirst
  - PayPal\_Production\_Signature\_Credentials\_MobileFirst

However, there is no any requirements to number of credentials IDs used by int\_paypal\_sfra/bm\_paypal, and you are free to create as many credentials objects as it is needed for your organization (single PayPal account for all online stores versus multiple accounts).

For the needs of default integration of int\_paypal\_sfra/bm\_paypal you may create one service credentials object with any id.

2. Update credentials record(s), using the exact credentials from your PayPal merchant account. You should specify PayPal API Username (User field) and PayPal API Password (Password field) and chose to use either API Signature or Certificate.

3. If Signature is used, you need to uncheck “Use certificate” checkbox and fill “API Signature” field.

Administration > Operations > Services > Service Credentials > PayPal\_Test\_Signature\_Credentials - Details

## PayPal\_Test\_Signature\_Credentials

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.

Name:	PayPal_Test_Signature_Credentials
URL:	<input type="text" value="https://api-3t.sandbox.paypal.com/nvp"/> <span style="border: 2px solid red; padding: 2px;"> </span>
User:	x-facilitator_api1.company.com
Password:	.....
<b>PayPal</b>	
It is production credentials: <input type="checkbox"/>	
Use certificate: <input type="checkbox"/>	
API Signature: An5ns1Kso7MWUdW4ErQKJJ4qj4-AGp8MzJ4uwMVhlaf545	

**Apply** **Reset**

*Example of view Credential using Signature*

4. If Certificate is used, you need to check “Use certificate” checkbox and upload Certificate.

Administration > Operations > Services > Service Credentials > Paypal\_Test\_Certificate\_Credentials - Details

## Paypal\_Test\_Certificate\_Credentials

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.

Name:	Paypal_Test_Certificate_Credentials
URL:	<input type="text" value="https://api.sandbox.paypal.com/nvp"/> <span style="border: 2px solid red; padding: 2px;"> </span>
User:	x-facilitator_api1.company.com
Password:	.....
<b>PayPal</b>	
It is production credentials: <input type="checkbox"/>	
Use certificate: <input checked="" type="checkbox"/> <span style="border: 2px solid red; padding: 2px;"> </span>	
API Signature: <input type="text"/>	

**Apply** **Reset**

*Example of view Credential using Certificate*

Upload your API Certificate (only if you will use API Certificate authentication). To do this, go to **Business Manager > Administration > Operations > Private Keys**, click **Import**, and follow the flow shown in Figure 9.

**NOTE:** You must provide a \*.p12 private key. To generate one, you can use the OpenSSL utility. For details, see <https://developer.paypal.com/docs/classic/api/apiCredentials/>.

Alias	Hostnames	Type	Valid From	Valid To	Import Date	Algorithm	Key Size	Status
paypal_sandbox_cert		Private Key	3/21/2016	3/22/2019	4/18/2018	RSA	2048	Valid

Figure 8. PayPal API Credentials Certificate in the Commerce Cloud Keychain

5. Configure the **int\_paypal.http.nvp.payment.PayPal.MobileFirst** service to use service credentials object you configured prior.
6. Enable the communication log for the **int\_paypal.http.nvp.payment.PayPal.MobileFirst** service. The Communication log will log every request and response to the log files.

**Name:** int\_paypal.http.nvp.payment  
**Type:** HTTP  
**Enabled:**   
**Service Mode:** Live  
**Log Name Prefix:** PayPalHttpNvp  
**Communication Log Enabled:**   
**Force PRD behavior in non-PRD environments:**   
**Profile:** PayPal\_Default\_Profile  
**Credentials:** PayPal\_Sandbox\_Signature\_Credentials\_SiteGenesis

Figure 9. *int\_paypal.http.nvp.payment.PayPal.CustomSiteID*

7. Grant access to PayPal Transactions (the BM Extension feature) to the target roles (and optionally, for the Business Manager “PayPal Transactions” extension). Here’s how:
  - a. Go to **Business Manager > Administration > Organization > Roles & Permissions** and select the target role that needs to have access to PayPal Transaction management.
  - b. Select the **Business Manager Modules** tab in the drop-down list on top. You must select your target site as the active context. (See Figure 10.)
  - c. Scroll to the **PayPal Transactions** module. Grant access to it by checking the checkbox and clicking **Update**.

Once you do this, every Business Manager user with that role can manage PayPal Transactions by selecting **Business Manager > Merchant Tools> Ordering > PayPal Transactions**.

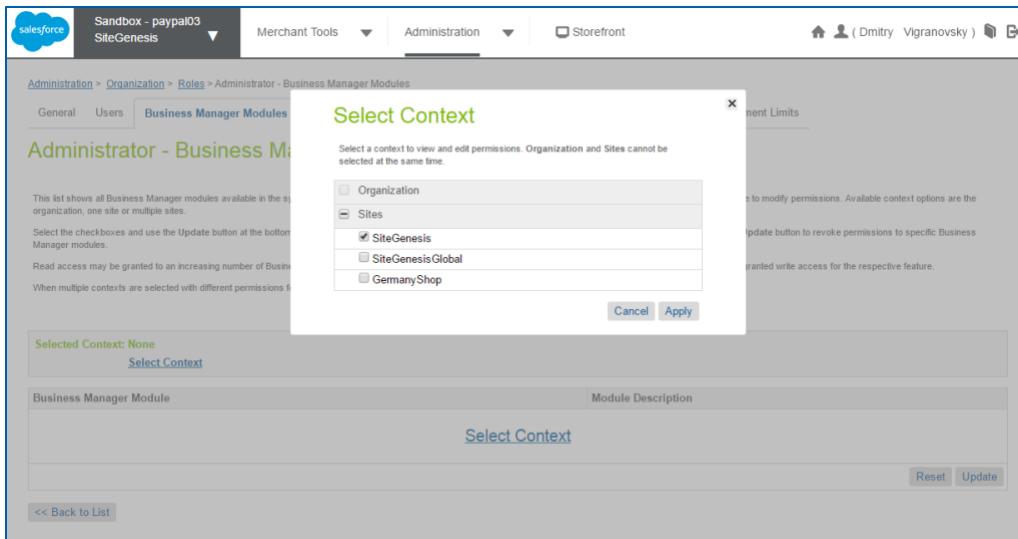


Figure 10. Select Context

### 3.2.3 Adding the Payment Options (Express Checkout and PayPal Credit)

You must create Payment Processor record and configure the Payment Methods to be used. Here's how:

1. Go to **Business Manager > Merchant Tools > Ordering > Payment Processors**.
2. Create payment processor **PAYPAL**. (See Figure 11.)
3. Update Payment Instruments to use the PAYPAL payment processor. (See Figure 12)
4. Select your target site and go to **Business Manager > Merchant Tools > Ordering > Payment Methods**.
5. Create or select the **PayPal** Payment Method and select **PAYPAL** as the Payment Processor. This will be used for PayPal Express Checkout or PayPal.
6. Click **Select** near the Image field and upload `pp-acceptance-small.png`. Select this image for this payment method.

**NOTE:** You'll find images in the repository folder.

Merchant Tools > Ordering > Payment Processors		
Payment Processors		
The list shows all payment processors currently defined for this site. Click <b>New</b> to create a custom payment processor. Use the check boxes and then click <b>Delete</b> to delete payment processors. Note that standard system payment processors can not be deleted.		
Select All	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_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="#">PAYPAL</a>	PayPal Payment Processor

Figure 11. PAYPAL Payment Processor

**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. When you select the **CREDIT\_CARD** payment method, credit/debit cards can be reordered through drag and drop.

ID	Name
BANK_TRANSFER	Bank Transfer
BML	Bill Me Later
CREDIT_CARD	Credit Card
DW_ANDROID_PAY	Android Pay
DW_APPLE_PAY	Apple Pay
GIFT_CERTIFICATE	Gift Certificate
PayPal	PayPal

**PayPal Details**

HTML Editor

Image:

Payment Processor:

Figure 12. PayPal Payment Instrument Configuration

### 3.2.4 Updating PayPal Credit Banner Preferences

Optionally, you can modify the appearance of the PayPal Credit banner. Here's how:

1. Go to **Business Manager > Merchant Tools > Site Preferences > Custom Site Preferences > PayPal Branding**.
2. Set your preferences for the following:
  - o Campaign ID for PayPal credit banner preference ID by Commerce Cloud Campaign ID.
  - o PayPal Credit Banner Width.
  - o PayPal Credit Banner Height.

You'll find dimensions for the PayPal Credit banner on the PayPal Financing Portal at <https://financing.paypal.com/ppfinportal/adGenerator/webSize>.

**NOTE:** The Portal requires you to sign in.

Your PayPal Credit banners will be shown according to your Campaign settings.

### 3.2.5 Updating Cartridge Custom Site Preferences

Here's how:

1. Go to **Business Manager > Merchant Tools > Site Preferences > Custom Site Preferences**. You'll see two new Custom Site Preference Groups (See Figure 13, Figure 14, and Figure 15.) Each preference has its own description.

Custom Site Preference Groups <small>?</small>				
				<a href="#">View Across Sites</a> <a href="#">New</a>
ID	Name	Description	Preferences	<a href="#">View Across Sites</a>
Storefront Configs	Storefront Configurations		7	<a href="#">View</a>
Paypal_Branding	PayPal Branding		7	<a href="#">View</a>
Paypal_Express_Checkout	PayPal Express Checkout		19	<a href="#">View</a>

Figure 13. PayPal Custom Site Preferences

- Click **View** for PayPal Express Checkout. Then select your preferred settings for the preferences shown in Figure 14:

- Enable PayPal Express Checkout on the cart page
- Payment Action
- Reference Transaction Payment Action
- Run Authorization in Case of Order
- Billing Agreement State
- Billing Agreement Description
- Billing Agreement Type
- Billing Agreement Payment Type
- Shipping Address Override
- Retrieve Billing Address From PayPal
- Accept only confirmed shipping addresses
- Express Checkout Solution Type
- Express Checkout Landing Page
- Display shipping address state
- Allow Multiple Capture
- Write IPN notifications to the Logs
- Cart Button Configuration
- Billing Button Configuration

Merchant Tools / Site Preferences / Custom Site Preference Groups /

### PayPal Express Checkout

Cancel Apply to Other Sites Save

Instance Type: Sandbox

Search by IDs...

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Name	Value	Default Value	
Visibility of PayPal Express Checkout Button on the Cart page	Yes	No	<a href="#">Edit Across Sites</a>
Payment Action	Sale (Sale) Payment action can be Order, Sale, Authorization	Authorization	<a href="#">Edit Across Sites</a>
Reference Transaction Payment Action	Order (Order) Payment Action for the Reference Transactions. This setting will be us...	Sale	<a href="#">Edit Across Sites</a>
Run Authorization in Case of Order	No Run Authorization in Case of Order (DoAuthorization call will be invoke...	No	<a href="#">Edit Across Sites</a>
Billing Agreement State	Require all buyers to create a billing agreement (RequireAllBuyers) Allows to specify what behaviour of billing agreement must be	Do not create a billing agreement	<a href="#">Edit Across Sites</a>
Billing Agreement Description	Billing Agreement Description : Configured by tester		<a href="#">Edit Across Sites</a>
Maximum length: 126 characters			
Billing Agreement Type	MerchantInitiatedBillingSingleAgreement (MerchantInitiatedBilling) Billing Agreement Type	MerchantinitiatedBilling	<a href="#">Edit Across Sites</a>
Billing Agreement Payment Type	Any (Any) Allows you to specify what payment types you will accept for payment...	Any	<a href="#">Edit Across Sites</a>
Shipping Address Override	No Defines where to take shipping address. If preference is No - shipping ...	No	<a href="#">Edit Across Sites</a>
Retrieve Billing Address From PayPal	Yes If checked and address from PayPal is used then save it to Demandwa...	Yes	<a href="#">Edit Across Sites</a>
Accept only confirmed shipping addresses	No If enabled then Customer address should be confirmed and verified by...	No	<a href="#">Edit Across Sites</a>
Express Checkout Solution Type	Sole (Sole) Sole – Buyer does not need to create a PayPal account to check out. T...	Sole	<a href="#">Edit Across Sites</a>
Express Checkout Landing Page	Billing (Billing) Type of PayPal page to display. It is one of the following values: Billin...	Login	<a href="#">Edit Across Sites</a>
Display shipping address state	If you do not pass the shipping address, PayPal obtains it from the b... Determines where or not PayPal displays shipping address fields on th...	PayPal displays the shipping address ...	<a href="#">Edit Across Sites</a>
Allow Buyers Note	Yes Allows buyer to leave note for merchant in express checkout flow (on ...	No	<a href="#">Edit Across Sites</a>
Allow Multiple Capture	No Allows merchant to capture multiple times the same authorization. Fo...	No	<a href="#">Edit Across Sites</a>
Write IPN notifications to the Logs	Yes Notifications will appear in the logs in the JSON format in the logs fo...		<a href="#">Edit Across Sites</a>
Cart Button Configuration	{ locale: 'en_US', style: { size: 'medium', // small, medium, large, responsive color: 'gold', // gold, blue, silver, black } }		<a href="#">Edit Across Sites</a>
Format: JS object literal notation			
Billing Button Configuration			<a href="#">Edit Across Sites</a>

Figure 14. PayPal Express Checkout Custom Site Preferences

3. Configure the PayPal Branding preferences shown in Figure 15:

- Payer ID
- Merchant Publisher ID
- Brand Name
- Logo image URL
- Campaign ID for PayPal credit banner
- PayPal Credit Banner Width
- PayPal Credit Banner Height
- PayPal Marketing Solutions ID
- Enable PayPal UK Credit Financial Options Banners
- Password to enable PayPal UK Credit Financial Options Banners

Merchant Tools / Site Preferences / Custom Site Preference Groups / [PayPal Branding](#) 

[Cancel](#) [Apply to Other Sites](#) [Save](#)

Name	Value	Default Value	
Merchant Publisher ID	G4H6MDEHGXXX		<a href="#">Edit Across Sites</a>
Brand Name	BrandName		<a href="#">Edit Across Sites</a>
Logo image URL	https://www.examplesite.com/icons/preview/black/logo-:		<a href="#">Edit Across Sites</a>
Campaign ID for PayPal credit banner			<a href="#">Edit Across Sites</a>
PayPal Credit Banner Width	190		<a href="#">Edit Across Sites</a>
PayPal Credit Banner Height	100		<a href="#">Edit Across Sites</a>
PayPal Marketing Solutions ID	6cf94201-4f9b-11e8-8146-c5fec5b4xxxx		<a href="#">Edit Across Sites</a>
Enable PayPal UK Credit Financial Options Banners	Yes	No	<a href="#">Edit Across Sites</a>
Password to enable PayPal UK Credit Financial Options Banners	XXXX		<a href="#">Edit Across Sites</a>

Search by IDs...   1-9 of 9

Figure 15. PayPal Branding Custom Site Preferences

**NOTE:** If you don't check (select) the preferences "Shipping Address Override" and "Accept only confirmed shipping addresses," you won't be able to select the option "PayPal does not display shipping address fields whatsoever" for the "Display shipping address state" preference.

### 3.3 Customizing Code

Store Front Reference Architecture (SFRA) does not imply modification of core cartridge to enable any of LINK integration cartridges. `int_paypal_sfra/bm_paypal` follows best practices recommended by Salesforce, thus no any code changes are required for the default installation.

### 3.4 External Interfaces

#### 3.4.1 Using Services

The main configuration for the integration of PayPal services is the `int_paypal.http.nvp.payment.PayPal.CustomSiteID` service, which you'll find under **Business Manager > Administration > Operations > Services**. (See Figure 16.)

The screenshot shows the 'Administration > Operations > Services > int\_paypal.http.nvp.payment.PayPal.SiteGenesis - Details' page. The title is 'int\_paypal.http.nvp.payment.PayPal.CustomSiteID'. A note at the top says: 'Fields with a red asterisk (\*) are mandatory. Click Apply to save the details. Click Reset to revert to the last saved state.' The form fields are as follows:

Name:*	int_paypal.http.nvp.payment.Pay
Type:	HTTP
Enabled:	<input checked="" type="checkbox"/>
Service Mode:	Live
Log Name Prefix:	Paypal_Test_SG
Communication Log Enabled:	<input checked="" type="checkbox"/>
Profile:	PayPal_Default_Profile
Credentials:	PayPal_Sandbox_Signature_Credentials_CustomSiteID

At the bottom are 'Apply' and 'Reset' buttons.

Figure 16. `int_paypal.http.nvp.payment.PayPal.CustomSiteID`

**NOTE:** Your service should be postfixed by `.CustomSiteID` (dot CustomSiteID) and your credentials should be postfixed by `_CustomSiteID` (underscore CustomSiteID), where **CustomSiteID** is your site ID in the Commerce Cloud system. (For example, `int_paypal.http.nvp.payment.PayPal.CustomSiteID`).

**NOTE:** If merchant credentials must be separated for different currency on the same site, the configuration service ID must be `int_paypal.http.nvp.payment.PayPal.CustomSiteID.CurrencyCode` (For example: `int_paypal.http.nvp.payment.PayPal.MobileFirst.EUR`, `int_paypal.http.nvp.payment.PayPal.MobileFirst.BRL`). If for some currency there is no appropriate service, default service (without `.CurrencyCode` postfix) will be used.

You can edit the Log Name Prefix, enable Communication Logs, and the Change Credentials record for this service. This cartridge ships with four credentials records that you should replace with your credentials. Depending on your preferred authentication method (API Certificate or API Signature), you must select either the Certificate credentials or the Signature credentials record. If you want to run PayPal integration with the PayPal Sandbox environment, you must select either the Sandbox or the Production credentials record.

If you're using Signature as your PayPal API Credential, update the PayPal Signature in Service Credentials object. To do so, select **Business Manager > Administration > Services > Credentials** and update Service Credentials object used by Service Definition `int_paypal.http.nvp.payment.PayPal.CustomSiteID`.

If you're using Certificate as your PayPal API Credential, you need to check the appropriate checkbox in Service Credentials object used by Service Definition `int_paypal.http.nvp.payment.PayPal.CustomSiteID`. Make sure there is a certificate uploaded via **Business Manager > Administration > Operations > Private Keys and Certificates**.

**NOTE:** Commerce Cloud uses a cache for service initialization scripts, so the credentials record will be cached. To run service initialization after updating your services credentials or Signature, switch to a different code version and then switch back to the original version. This action will trigger the service initialization scripts.

### 3.4.2 API Calls

All requests are formed as **Name=Value** strings, separated by **&**. This format is called NVP. To learn more about NVP, visit the PayPal Developer Portal page [PayPal Name-Value Pair API Basics](#).

This PayPal Integration cartridge supports the following PayPal Classic API calls:

- SetExpressCheckout
- GetExpressCheckoutDetails
- DoExpressCheckoutPayment
- GetTransactionDetails
- TransactionSearch
- DoAuthorization
- DoReauthorization
- DoVoid
- DoCapture
- RefundTransaction
- DoReferenceTransaction
- BillAgreementUpdate

### 3.4.3 Controller Version

Each of the API calls listed under **API Calls** is implemented as a stand-alone method of the `paypalApi` module and can be invoked from external code without

integration to SFRA. However, you still need to configure custom preferences, as shown in the following example:

```
var paypalApi = require('int_paypal_sfra/cartridge/scripts/paypalApi.js');
var result = paypalApi.doVoid({
    authorizationID: 'R34ss2d88gXww004577700sssD',
    note: 'Some note'
});
/*
success result
{
    requestContainer: requestContainer,
    responseData: responseData//Response data
}
error result
{
    error: true
}
*/
```

#### 3.4.4 API Call Data Examples

**NOTE:** For a detailed description of parameters, see [PayPal Name-Value Pair API Basics](#).

API Operation	Description
SetExpressCheckout	Initiates an Express Checkout transaction.
DoExpressCheckoutPayment	Completes an Express Checkout transaction. If you set up a billing agreement in your <b>SetExpressCheckout</b> API call, the billing agreement is created when you call the <b>DoExpressCheckoutPayment</b> API operation. The <b>DoExpressCheckoutPayment</b> API operation completes an Express Checkout transaction. If you set up a billing agreement in your <b>SetExpressCheckout</b> API call, the billing agreement is created when you call the <b>DoExpressCheckoutPayment</b> API operation.
GetTransactionDetails	Obtains information about a specific transaction.
DoAuthorization	Authorizes a payment. (More about authorization and capture)
DoVoid	Voids an order or an authorization.
DoCapture	Captures an authorized payment.
RefundTransaction	Issues a refund to the PayPal account holder associated with a transaction. This API operation can be used to issue a full or partial refund for any transaction within a default period of 60 days from when the payment is received.

API Operation	Description
DoReferenceTransaction	Processes a payment from a buyer's account, which is identified by a previous transaction.
TransactionSearch	Searches transaction history for transactions that meet the specified criteria.

### 3.5 Testing

You must obtain your own test account on the [PayPal Developer Portal](#). If you can't create your own PayPal Sandbox account, contact PayPal support.

## 4 Operations and Maintenance

### 4.1 Data Storage

The int\_paypal\_sfra integration requires System Objects Extension to store payment-related information.

**OrderPaymentInstrument custom properties:**

- **paypalAck** – Result of a payment action (Auth, Order, Sale).
- **paypalCorrelationId** – The reference ID for PayPal API calls.
- **paypalPayerID** – The PayPal Payer ID in the PayPal service.
- **paypalPaymentStatus** – PayPal payment status.
- **paypalToken** – Used to identify Set, Get, Do ExpressCheckout API calls. Helps to identify payments.
- **paypalCredit** – Indicates if this transaction used PayPal Credit.

**Profile custom properties:**

- **paypalBillingAgreementId** – The PayPal Billing Agreement ID.

**Order custom properties:**

- **paypalPaymentMethod** – Property to differentiate Express Checkout.

**PaymentTransaction custom properties:**

- **transactionsHistory** – History of PayPal transactions related to the actual payment transaction.

### 4.2 Logs

This integration introduces a few new custom logs:

1. **PayPal Custom logs** – Such as the Custom-PayPal-blade2-2-appserver-20150722.log. This Log file contains all errors related information in the int\_paypal\_sfra and bm\_paypal cartridges.
2. **PayPal Instant Payment Notification logs** – Such as the Custom-PayPalNotifications-blade2-2-appserver-20150723.log. This log file contains IPN data (incoming IPN

messages). You can enable these logs in the Site Preferences by writing IPN notifications to the Logs (via **Merchant Tools > Site Preferences > Custom Site Preferences > Paypal General Configuration**).

3. **Service communication logs** –These logs contain every request and response to the PayPal endpoint. To enable these logs, go to **Administration > Operations > Services > int\_paypal.http.nvp.payment.PayPal.CustomSiteID** and check the **Communication Log Enabled** preference. service-PayPalHttpNvp-blade2-2-appserver-20150730.log is an example of the service communication logs.

All log files are located in the Logs folder (under **Administration > Site Development > Development Setup > Logs**). For example: <https://paypal01-tech-prtnr-na01-dw.demandware.net/on/demandware.servlet/webdav/Sites/Logs>.

### 4.3 Availability

You can track availability by service status in the Commerce Cloud Business Manager. (**Go to Administration > Operations > Service Status > int\_paypal.http.nvp.payment.PayPal.CustomSiteID**.) See Figure 17.

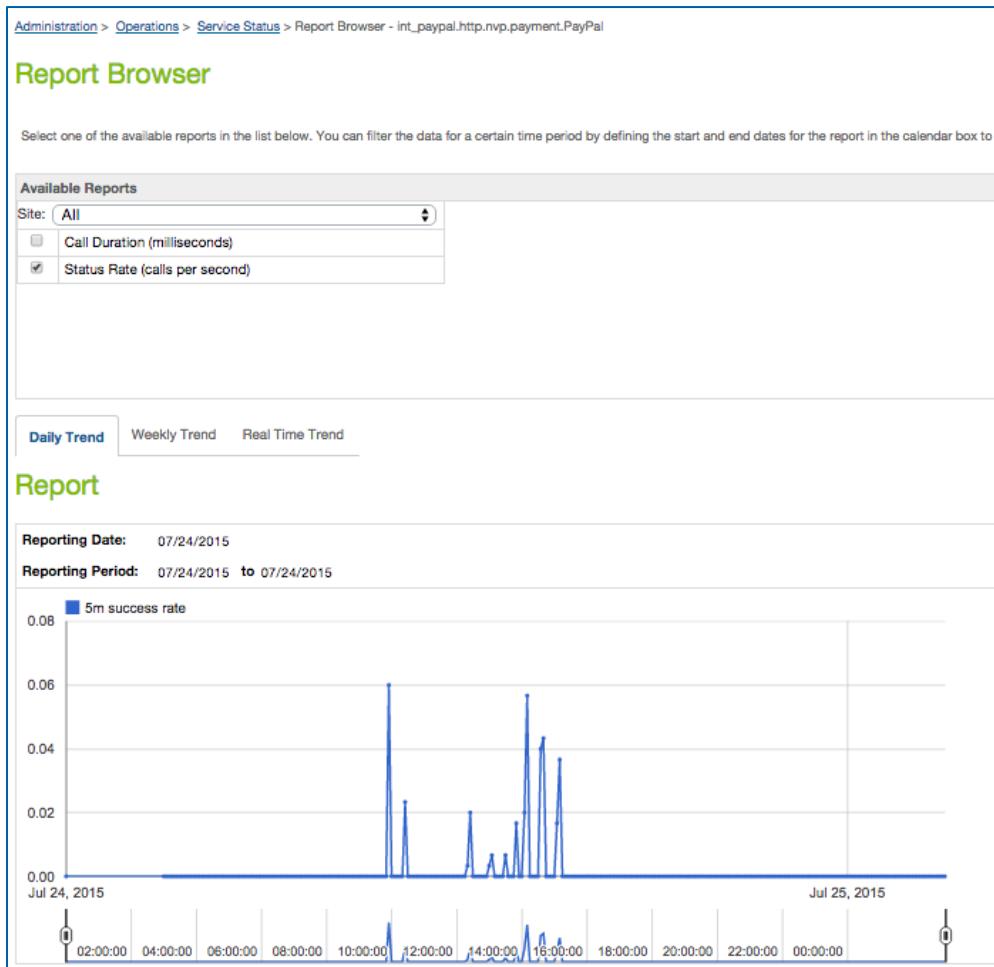


Figure 17. PayPal Service Availability Chart

You can configure any availability options related to this PayPal integration via the Commerce Cloud Service Profile Interface. (To do this, go to **Administration > Operations > Services > Service Profiles**.). You can set a timeout for all requests, enable the Circuit Breaker mechanism, and adjust the Rate Limit. Use thePayPal\_Default\_Profile (shown in Figure 18) for this.

Administration > Operations > Services > Service Profiles > PayPal\_Default\_Profile - Details

## PayPal\_Default\_Profile

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 1.00 service.

Name:*	PayPal_Default_Profile
Timeout (ms):	60,000
Enable Circuit Breaker:	<input type="checkbox"/>
Max Circuit Breaker Calls:	0
Circuit Breaker Interval (ms):	0
Enable Rate Limit:	<input type="checkbox"/>
Max Rate Limit Calls:	0
Rate Limit Interval (ms):	0

Figure 18. PayPal Service Profile Settings

#### 4.4 Support

Here's how to get help and support from PayPal:

- **PayPal Business support** – Go to PayPal's [Common Questions and Help Topics page](#) and log in to your PayPal account.
- **Technical Support** – Go to the [Merchant Technical Support home page](#).
- **PayPal Site Notifications** – Go to PayPal's [Get Notified webpage](#).

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## 5 User Guide

### 5.1 Roles and Responsibilities

PayPal introduced no new roles with this integration. You'll need to update existing roles or create and update new ones if you want to use the Business Manager extension PayPal Transactions.

## 5.2 Business Manager

This integration introduces a new Business Manager function, PayPal Transactions. See the section “Installing API Credentials” in this document for a detailed description of how to grant access to the PayPal Transactions page.

The PayPal Transactions extension allows you to manage PayPal transactions assigned to Commerce Cloud Orders by the Commerce Cloud Business manager.

The main PayPal Transactions page displays all orders in the Commerce Cloud Site that were paid or partially paid by PayPal Express Checkout (and also PayPal Credit). Functionality (See Figure 19.) You can access this page in the Ordering menu by selecting **Business Manager > Merchant Tools > Ordering > PayPal Transactions**.

This page displays various information from the order record:

Number	Order Date	Created By	Registration Status	Customer	Email	Order Total	PayPal Amount	Paypal Payment Status
00001905	7/23/15 10:15 am	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$104.99	\$104.99	Pending
00001904	7/23/15 10:13 am	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$104.99	\$104.99	Pending
00001903	7/23/15 9:16 am	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$377.99	\$377.99	Pending
00001805	7/22/15 1:15 pm	Customer	Registered	Dmitry Vigranovsky	dmitry_vigranovsky@epam.com	\$971.24	\$621.24	Completed
00001804	7/22/15 12:13 pm	Customer	Registered	Dmitry Vigranovsky	dmitry_vigranovsky@epam.com	\$278.77	\$202.77	Completed
00001803	7/22/15 12:10 pm	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$3,045.85	\$3,045.85	Completed
00001802	7/22/15 12:07 pm	Customer	Unregistered	Guest	Denys_Lieukhn-buyer@epam.com	\$76.00	\$76.00	Completed
00001801	7/22/15 12:06 pm	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$963.88	\$963.88	Completed
00001701	7/22/15 8:31 am	Customer	Registered	Dmitry Vigranovsky	dmitry_vigranovsky@epam.com	\$1,189.07	\$1,189.07	Pending
00001601	7/16/15 9:41 am	Customer	Registered	Dmitry Vigranovsky	dmitry_vigranovsky@epam.com	\$56.69	\$56.69	Pending

Figure 19. PayPal Transactions Business Manager Main Page Interface

You can search Orders placed within PayPal Express Checkout by the Commerce Cloud Order Number (as shown in Figure 20) or by PayPal Transaction ID (as shown In Figure 21).

Screenshot of the Commerce Cloud interface showing the 'PayPal Transactions' search results. The search bar at the top has 'Order Number: 00001803' and a 'Find' button. The results table shows one item:

Number	Order Date	Created By	Registration Status	Customer	Email	Order Total	PayPal Amount	Paypal Payment Status	
00001803	7/22/15 12:10 pm	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$3,045.85	\$3,045.85	Completed	<a href="#">Change</a>

Showing 1 - 1 of 1 items.

[<< Back to Ordering](#)

Figure 20. Search Orders with PayPal Transaction by Commerce Cloud Order Number

Screenshot of the Commerce Cloud interface showing the 'PayPal Transactions' search results. The search bar at the top has 'Transaction ID: 18550924TK545642L' and a 'Find' button. The results table shows one item:

Number	Order Date	Created By	Registration Status	Customer	Email	Order Total	PayPal Amount	Paypal Payment Status	
00001803	7/22/15 12:10 pm	Customer	Unregistered	Guest	I.VinogradovVN@gmail.com	\$3,045.85	\$3,045.85	Completed	<a href="#">Change</a>

Showing 1 - 1 of 1 items.

[<< Back to Ordering](#)

Figure 21. Search Orders with PayPal Transaction by Transaction ID

You can see Transaction Details from the PayPal Payment Transaction of the actual order by clicking **Order Number** or the **Change** link on the right. If an order has more than one related transaction, you'll see a selection box with all of the transactions that are related to the current order (as shown in Figure 23).

This screenshot shows the SiteGenesis interface for PayPal Transactions. At the top, there are tabs for 'Sandbox - Instance SiteGenesis', 'Merchant Tools', 'Administration', and 'Storefront'. A user 'Vigranovsky' is logged in. Below the tabs, a breadcrumb navigation shows 'Ordering > PayPal Transactions'. The main area is titled 'PayPal Trans' and contains a search bar and a table of orders. A modal window titled 'Transactions of order: 00002001' is open, displaying detailed information about a specific transaction. The transaction ID is O-1E465928NS058401X. The modal shows the sender's name (Ivan Vinogradov), email (I.VinogradovVN@gmail.com), amount (406.33 USD), sales tax (19.35 USD), shipping (9.99 USD), handling (0.00 USD), invoice ID (00002001), order date (7/24/15 10:21 am), and payment status (Pending). It also lists the shipping address: Ivan Vinogradov, 500 15th Street, room 2034, San Francisco, CA 94103, United States, with a status of Confirmed. Buttons for 'Create Sale Transaction' and 'Create Authorization Transaction' are present. To the right of the modal, a sidebar titled 'By Transaction ID' shows a list of PayPal Payment Statuses: Pending, Pending, Pending, Pending, Completed, Completed, Completed, Completed, Pending. Below the sidebar, page navigation buttons (4, 5, 6, Next, >>) are visible.

Figure 22. Transaction Details Popup

This screenshot shows the SiteGenesis interface for PayPal Transactions. The layout is similar to Figure 22, with tabs at the top and a breadcrumb navigation. The main area is titled 'PayPal Transactions' and contains a search bar and a table of orders. A modal window titled 'Transactions of order: 00002001' is open, showing a single transaction. The transaction ID is SYA010974E551673T. The modal displays the sender's name (Ivan Vinogradov), email (I.VinogradovVN@gmail.com), amount (-406.33 USD), sales tax (19.35 USD), invoice ID (00002001), order date (7/24/15 10:24 am), and payment status (Completed). To the right of the modal, a dropdown menu labeled 'Other transactions:' shows a list of transaction IDs: SYA010974E551673T, O-1E465928NS058401X, 0X70168755201900V, 90348064AS593644R, and SYA010974E551673T. This list is highlighted with a red rectangle. A sidebar titled 'By Transaction ID' shows a list of PayPal Payment Statuses: Pending, Pending, Pending, Pending, Completed, Completed, Completed, Completed, Pending. Below the sidebar, page navigation buttons (1, 2, 3, 4, 5, 6, Next, >>) are visible.

Figure 23. PayPal Transactions Selected for Their Relationships to Commerce Cloud Order Transactions

Each type of transaction can have the following action buttons (shown in Figure 24, Figure 25, and Figure 26):

- Create Sale Transaction
- Create Authorization Transaction
- Capture
- Void
- Issue Refund

The screenshot shows the SiteGenesis merchant dashboard under the 'Sandbox - Instance' tab. The main menu includes 'Merchant Tools', 'Administration', and 'Storefront'. A user profile for 'Vigranovsky' is at the top right. The current page is 'Ordering > PayPal Transactions'. A modal window titled 'Transactions of order: 00002001' displays a PayPal transaction. The transaction ID is '0-1E465928NS058401X'. The sender's name is 'Ivan Vinogradov' and the email is 'I.VinogradovVN@gmail.com'. The amount is '406.33 USD', sales tax is '19.35 USD', shipping is '9.99 USD', and handling is '0.00 USD'. The invoice ID is '00002001', order date is '7/24/15 10:21 am', and payment status is 'Pending'. The shipping address is 'Ivan Vinogradov, 500 15th Street, room 2034, San Francisco, CA 94103, United States, Confirmed'. On the right, there is a sidebar for 'Paypal Payment Status' with options for Pending, Pending Change, Pending, Pending Change, Pending, Pending Change, Completed, Completed Change, Pending, and Pending Change. Below the sidebar are navigation buttons: 'By Transaction ID', '4', '5', '6', and 'Next >>'. At the bottom of the modal are buttons for 'Create Sale Transaction' and 'Create Authorization Transaction'.

Figure 24. Payment Actions (1 of 3)

This screenshot is similar to Figure 24, showing the same PayPal transaction details. However, the sidebar on the right shows a different set of payment status options: Pending, Pending Change, Pending, Pending Change, Pending, Pending Change, Completed, Completed Change, Pending, and Pending Change. The rest of the interface is identical, including the modal window and the sidebar.

Figure 25. Payment Actions (2 of 3)

The screenshot shows the PayPal Transaction Details page. A modal window is open for Transaction ID: 90348064AS593644R. The modal displays the following information:

- Name:** Ivan Vinogradov (The sender of this payment is **verified**)  
**Email:** I.VinogradovVN@gmail.com
- Amount:** 406.33 USD  
**Sales Tax:** 19.35 USD  
**Shipping:** 9.99 USD  
**Handling:** 0.00 USD
- Invoice ID:** 00002001  
**Order Date:** 7/24/15 10:23 am
- Payment Status:** Completed  
**Issue Refund** button
- Shipping Address:** Ivan Vinogradov  
500 15th Street, room 2034  
San Francisco, CA 94103  
United States  
Confirmed

The background page shows a search results table for Order Number, with item 00002001 selected. The right sidebar lists "Paypal Payment Status" for various transactions.

Figure 26. Payment Actions (3 of 3)

The screenshot shows the PayPal Transaction Details page. A modal window is open for Transaction ID: O-1E465928NS058401X. The modal is titled "Create Authorization Transaction" and contains the following fields:

- Transaction ID:** O-1E465928NS058401X
- Name:** Ivan Vinogradov  
**Email:** I.VinogradovVN@gmail.com
- Amount:** 406.33 USD  
**Invoice ID:** 00002001

The modal has buttons for "Create Sale Transaction", "Create Authorization Transaction", "Submit", and "Cancel". Below the modal, the shipping address is listed again. The background page shows a search results table for Order Number, with item 00002001 selected. The right sidebar lists "Paypal Payment Status" for various transactions.

Figure 27. Create Authorization Transaction Form

The screenshot shows the SiteGenesis ordering interface. At the top, there are tabs for 'Sandbox - Instance SiteGenesis', 'Merchant Tools', 'Administration', and 'Storefront'. A user profile for 'Vigranovsky' is visible on the right. The main area is titled 'PayPal Trans' and shows a list of transactions. A modal window titled 'Void Authorization' is open, displaying details about a transaction with Authorization ID '0X70168755201900V'. The details include the buyer's name 'Ivan Vinogradov', email 'I.VinogradovVN@gmail.com', and amount '406.33 USD'. A note to the buyer is present, with a character count of '236 characters left'. The modal also shows the buyer's address: 'San Francisco, CA 94103 United States'. At the bottom of the modal are 'Submit' and 'Cancel' buttons.

Figure 28. Void Authorization Form

The screenshot shows the SiteGenesis ordering interface. The layout is similar to Figure 28, with tabs for 'Sandbox - Instance SiteGenesis', 'Merchant Tools', 'Administration', and 'Storefront'. A user profile for 'Vigranovsky' is visible. The main area is titled 'PayPal Trans' and shows a list of transactions. A modal window titled 'Capture Funds' is open, displaying details about a transaction with Authorization ID '0X70168755201900V'. The details include the buyer's name 'Ivan Vinogradov', email 'I.VinogradovVN@gmail.com', and authorization amount '406.33 USD'. A capture amount is set to '406.33 USD'. A note to the merchant is present, stating: 'Note to merchant: Your buyer Ivan Vinogradov authorized a payment of 406.33 USD. If you capture an amount different than this, you should notify your buyer of this change. PayPal strongly recommends that you explain any unique circumstances (e.g. multiple captures, changes in item availability) to your buyer in detail below. Your buyer will see this note in the Transaction Details.' A note to the buyer field is labeled '(optional)'. The modal also shows the buyer's address: 'San Francisco, CA 94103 United States'. At the bottom of the modal are 'Submit' and 'Cancel' buttons.

Figure 29. Capture Form

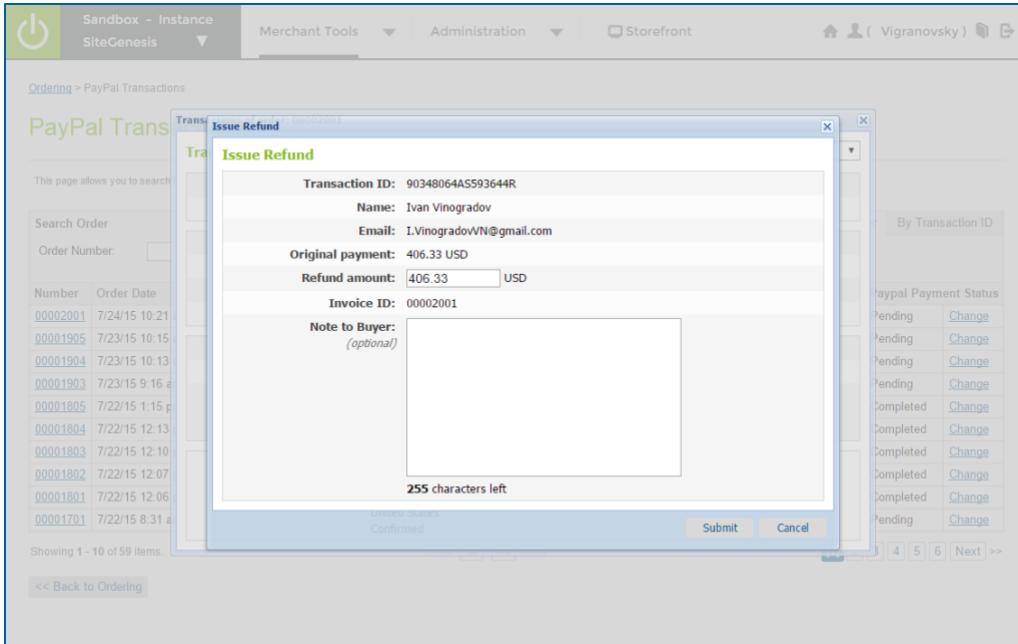


Figure 30. Issue Refund Form

PayPal delivers all payment related statuses through IPN. After a merchant's action, PayPal sends an IPN message to the Commerce Cloud end point and, depending on the status of this action, updates the order transaction.

You'll need to configure your IPN settings in the PayPal account to send IPNs to the Ipn-Listener controller action. (To do so, **select Profile > My selling tools > Instant Payment Notification.**) Your URL to Ipn Listener should look like this:  
`https://your\_instance\_domain/path\_to\_site\_if\_so/your\_locale/Ipn-Listener`.

**Example:** <https://paypal01-tech-prtnr-na01-dw.demandware.net/on/demandware.store/Sites-MobileFirst-Site/default/Ipn-Listener>.

**NOTE:** PayPal recommends that you configure the URL alias for this path in the Commerce Cloud's Business Manager.

**Edit Instant Payment Notification (IPN) settings**

[Back to My Profile](#)

PayPal sends IPN messages to the URL that you specify below.

To start receiving IPN messages, enter the notification URL and select **Receive IPN messages** below. To temporarily stop receiving IPN messages, select **Do not receive IPN messages** below. PayPal continues to generate and store IPN messages until you select **Receive IPN messages** again (or turn off IPN).

Notification URL

IPN messages

Receive IPN messages (Enabled)  
 Do not receive IPN messages (Disabled)

**Save** **Cancel**

[About Us](#) | [Fees](#) | [Privacy](#) | [Contact Us](#) | [Legal Agreements](#) | [Site Feedback](#) | [Help](#)

*Figure 31. IPN URL Configuration*

To learn more about configuring IPN, see [Identifying Your IPN Listener to PayPal](#).

### 5.3 Storefront Functionality

This integration of the PayPal Payment Link cartridge provides several changes to the Commerce Cloud Store Front Reference Architecture (SFRA) storefront:

1. PayPal Express Shortcut and PayPal Credit Shortcut on the Shopping Cart Page (Figure 32).

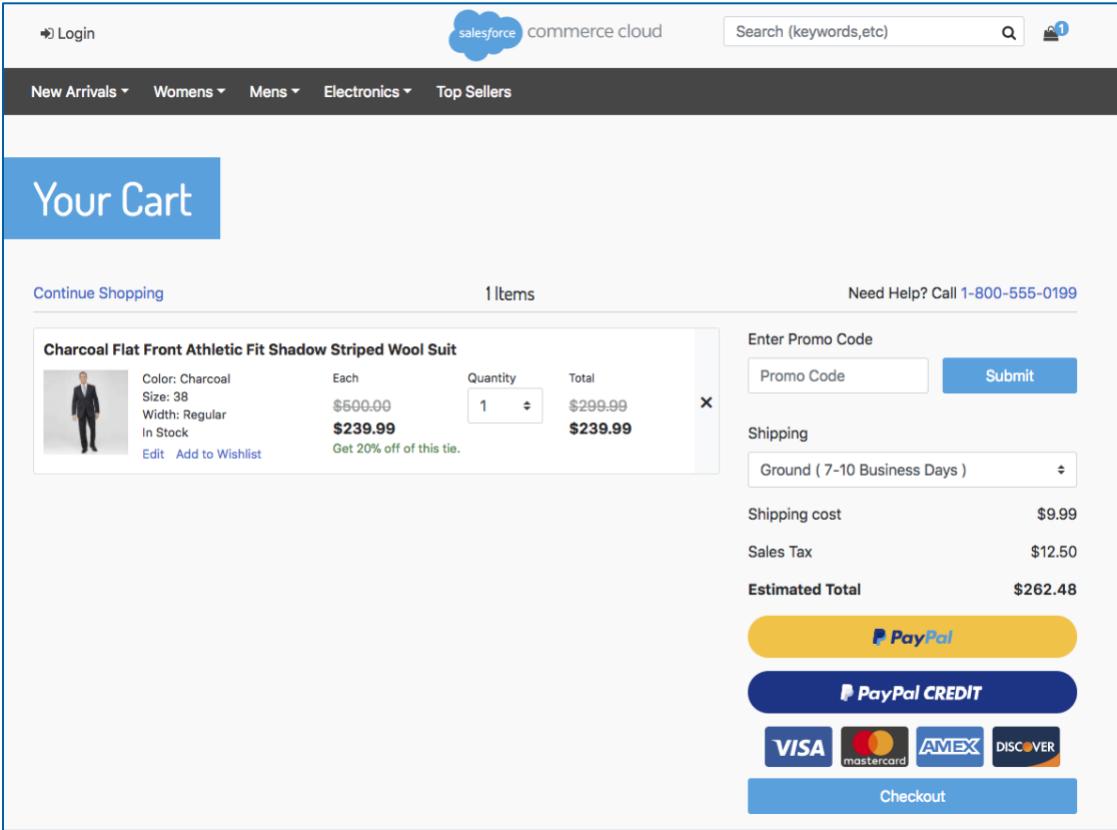


Figure 32. Shipping Cart with PayPal Express Checkout Mark and PayPal Credit Mark

2. PayPal Express Mark and PayPal Credit Mark on the Payment Page (Figure 34).

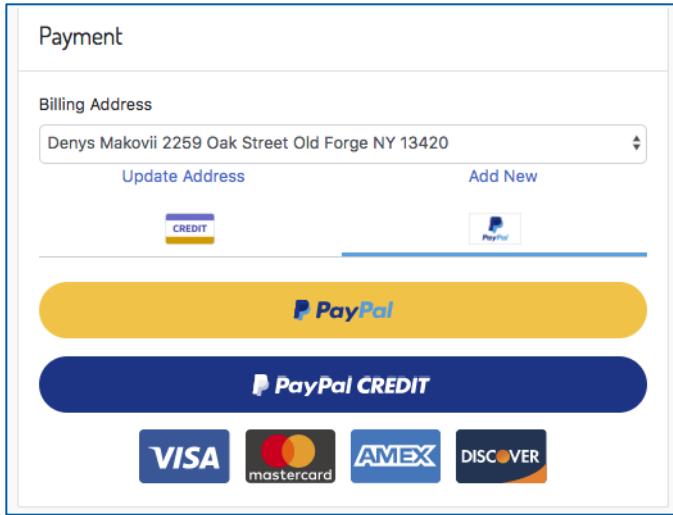


Figure 33. Payment Method Select (1. Optional PayPal Express, 2. Optional PayPal Credit 3. PayPal Guest Payment)

3. PayPal Reference Transactions. (For more information, visit the following page on the PayPal Developer portal: <https://developer.paypal.com/docs/classic/express-checkout/integration-guide/ECReferenceTxns/>.)

To enable Reference Transactions for checkout, you need to configure your Billing Agreement State custom preference. You'll find it under **Business**

**Manager > Merchant Tools > Site Preferences > Custom Site Preferences > PayPal Express Checkout.** (See Figure 34.)



Figure 34. Billing Agreement Options

If you enable a Billing Agreement, the buyer can save their PayPal account during checkout on the Payment page.

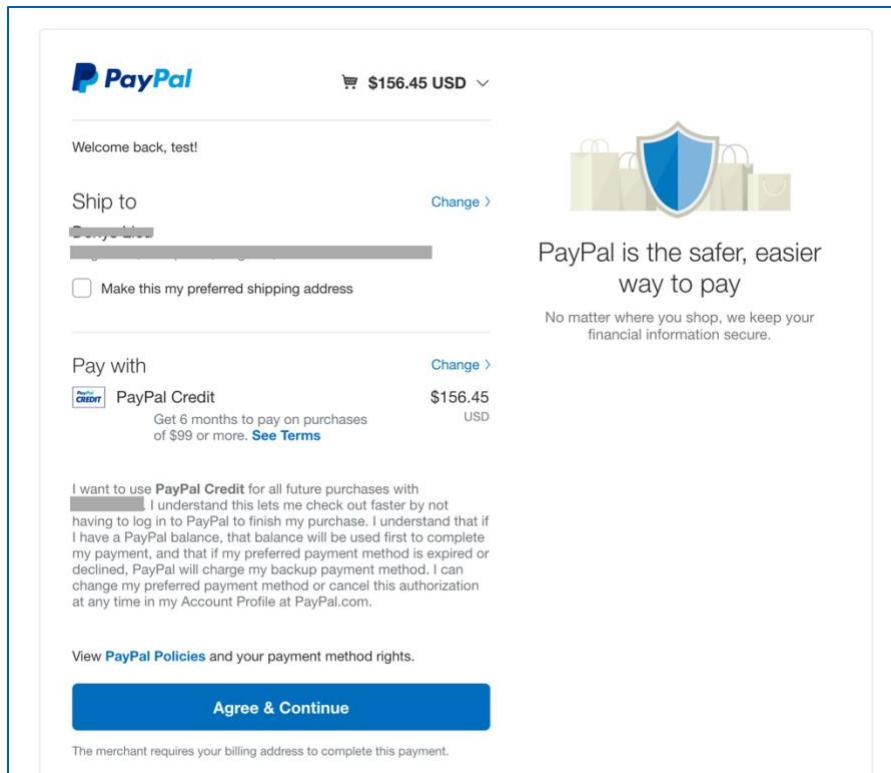


Figure 35. Billing Agreement on the PayPal Side

The screenshot shows a payment interface with a blue header bar. Below it, a section for 'Billing Address' contains a dropdown menu with the text 'Denys Makovii 2259 Oak Street Old Forge NY 13420'. To the right of the dropdown are 'Update Address' and 'Add New' buttons. Below the address section are two buttons: 'CREDIT' (with a yellow background) and 'PayPal' (with a white background). A checkbox labeled 'Save my PayPal payment method for future purchase' is positioned between them. Below these are two large, rounded rectangular buttons: one yellow containing the 'PayPal' logo and one dark blue containing the 'PayPal CREDIT' logo. At the bottom are logos for VISA, mastercard, AMEX, and DISCOVER.

*Figure 36. Billing Agreement Checkbox*

If a buyer previously saved their account during checkout and the checkbox “Use my stored PayPal account to pay” is checked (this checkbox is checked by default), the user won’t be redirected to PayPal. Instead, the PayPal Billing Agreement will be used to fulfill the payment.

The screenshot shows a payment interface with a blue header bar. Below it, a section contains a checked checkbox next to the email 'p.lorenstest@gmail.com' and the text 'Use my stored PayPal payment method to pay'. Below this is a large blue button with the text 'Next: Place Order'. At the top of the page are payment method icons for 'CREDIT' (yellow) and 'PayPal' (white).

*Figure 37. Billing Agreement Checkbox, with “Use my stored PayPal account to Pay” Checked*

The buyer can either use regular PayPal payment, or create a new Billing Agreement.

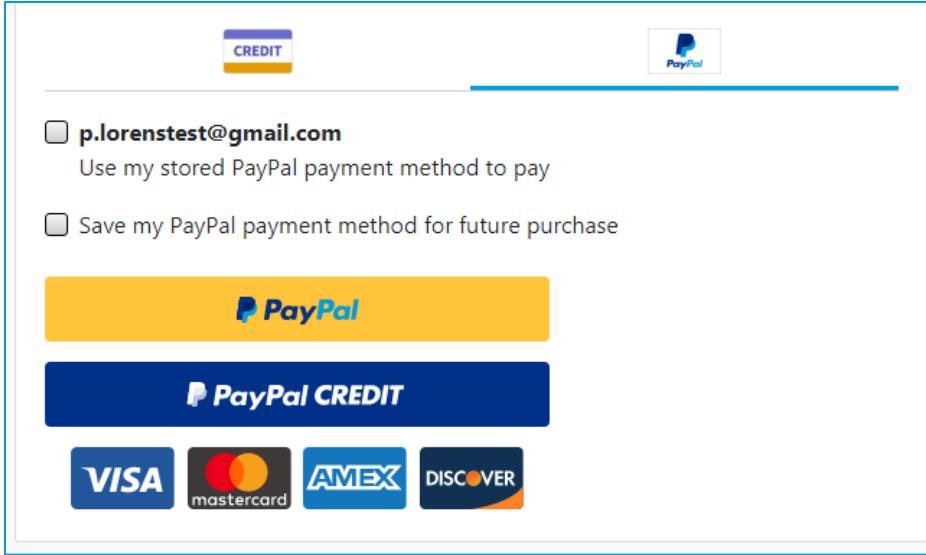


Figure 38. Billing Agreement Checkbox

## 6 Financing Options API (Installment Calculator – for UK merchants only)

Financing calculator feature is only available for PayPal merchants based out of UK. Please reach out to Braintree/PayPal support to enable this feature for your account and get further details.

PayPal UK merchants can use this [feature](#) to present financing options, such as installment, same-as-cash, and no-interest options, to buyers paying for goods or services.

### 6.1 Supported Features

The int\_paypal integration includes following:

- Framework for making any PayPal API call
- Methods for easily retrieving the Financing Options data
- Presentment examples

### 6.2 Functional Overview

#### 6.2.1 Framework for making any PayPal API call

To make any call to PayPal REST API needs to use `paypalRestApi.js` module. This module has method `call(methodType, path, data, contentType)`.

Example 1:

```
var paypalApi =  
require('* /cartridge/scripts/paypal/paypalRestApi');
```

```
var responseData = paypalApi.call('GET', 'credit/active-merchant-financing-options?country_code=US');
```

#### Example 2:

```
var paypalApi =
require('*-/cartridge/scripts/paypal/paypalRestApi');
var responseData = paypalApi.call('POST',
'credit/calculated-financing-options', {
    financing_country_code: 'US',
    transaction_amount: {
        value: 100.5,
        currency_code: 'USD'
    }
});
```

Details of all PayPal REST API methods see by the link

<https://developer.paypal.com/docs/api/overview/>

Before making calls the service configuration and credentials should be configured.

#### 6.2.2 Methods for easily retrieving the Financing Options data

Below are excerpts of the API request:

**paypalApi.credit.getActiveMerchantFinancingOptions(countryCode)**

```
var paypalApi =
require('*-/cartridge/scripts/paypal/paypalRestApi');
var reponseData =
paypalApi.credit.getActiveMerchantFinancingOptions('US');
```

**paypalApi.credit.getCalculatedFinancingOptions(requestData)**

```
var paypalApi =
require('*-/cartridge/scripts/paypal/paypalRestApi');
var reponseData =
paypalApi.credit.getCalculatedFinancingOptions({
    financing_country_code: 'US',
    transaction_amount: {
        value: 100.5,
        currency_code: 'USD'
    }
});
```

**creditFinancialOptionsHelper.getDataForAllOptionsBanner(costValue, currencyCode, countryCode)** – returns object with all options (INST-type) and other helpful information

```

var creditFinancialOptionsHelper =
require('*/cartridge/scripts/paypal/paypalCreditFinancingOptionsHelper.js');

var allOptionsData =
creditFinancialOptionsHelper.getDataForAllOptionsBanner(100
.5, 'USD', 'US');

```

The variable `allOptionsData` will contain:

```

▼ Object ⓘ
▶ monthSet: (4) [6, 12, 18, 24]
▶ monthlyPaymentValueSet: (4) [4.67, 6.04, 8.7, 16.96]
▼ options:
  ▶ 6:
    apr: 2.99
    ► monthlyPayment: {value: 16.96, currencyCode: "USD", formatted: "$16.960"}
    ► purchaseCost: {value: 100.5, currencyCode: "USD", formatted: "$100.500"}
    ► rawOptionData: {credit_financing: {}, min_amount: {}, monthly_percentage_rate: "0.249", monthly_payment: {}, total_interest: {}}
    term: 6
    ► totalCost: {value: 101.68, currencyCode: "USD", formatted: "$101.680"}
    ► __proto__: Object
  ▶ 12: {term: 12, apr: 5.99, monthlyPayment: {}, totalCost: {}, purchaseCost: {}}
  ▶ 18: {term: 18, apr: 8.99, monthlyPayment: {}, totalCost: {}, purchaseCost: {}}
  ▶ 24: {term: 24, apr: 9.99, monthlyPayment: {}, totalCost: {}, purchaseCost: {}}

```

**creditFinancialOptionsHelper.getDataForAllOptionsBanner(costValue, currencyCode, countryCode, creditType)** – returns all options by a credit type

```

var creditFinancialOptionsHelper =
require('*/cartridge/scripts/paypal/paypalCreditFinancingOptionsHelper.js');

var allOptions =
creditFinancialOptionsHelper.getAllOptions(100.5, 'USD',
'US', 'INST');

```

The variable `allOptions` will contain:

```

▼ (4) [{...}, {...}, {...}, {...}] ⓘ
  ▶ 0:
    ► credit_financing: {financing_code: "2YKJYM3DPB", product: "PAYPAL_CREDIT", apr: "9.99", nominal_rate: "9.9900", term: 24, ...}
    ► estimated_installments: (24) [..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ..., ...]
    ► min_amount: {currency_code: "USD", value: "149.00"}
    ► monthly_payment: {currency_code: "USD", value: "4.67"}
    monthly_percentage_rate: "0.833"
    paypal_subsidy: false
    ► total_cost: {currency_code: "USD", value: "112.28"}
    ► total_interest: {currency_code: "USD", value: "11.78"}
    ► __proto__: Object
  ▶ 1: {credit_financing: {}, min_amount: {}, monthly_percentage_rate: "0.499", monthly_payment: {}, total_interest: {}}
  ▶ 2: {credit_financing: {}, min_amount: {}, monthly_percentage_rate: "0.249", monthly_payment: {}, total_interest: {}}
  ▶ 3: {credit_financing: {}, min_amount: {}, monthly_percentage_rate: "0.749", monthly_payment: {}, total_interest: {}}
  length: 4
  ...

```

**creditFinancialOptionsHelper.getDataForAllOptionsBanner(costValue, currencyCode, countryCode, creditType)** – returns lowest monthly payment cost (INST-type)

```

var creditFinancialOptionsHelper =
require('*/cartridge/scripts/paypal/paypalCreditFinancingOptionsHelper.js');

var lowestCost =
creditFinancialOptionsHelper.getLowestPossibleMonthlyCost(1
00.5, 'USD', 'US');

```

The variable `lowestCost` will contain:

```

▼ {value: 4.67, currencyCode: "USD", formatted: "$4.670"} ⓘ
  currencyCode: "USD"
  formatted: "$4.670"
  value: 4.67

```

Also, the integration provides 2 endpoints:

`Sites-MobileFirst-Site/en_US/PaypalCreditFinancingOptions-GetLowestPossibleMonthlyCost?value=89&currencyCode=USD&countryCode=US`

```

1 {
2   "value": 4.14,
3   "currencyCode": "USD",
4   "labelText": "From $4.140 per month"
5 }

```

`/Sites-MobileFirst-Site/en_US/PaypalCreditFinancingOptions-GetAllOptionsData?currencyCode=USD&isGetCartTotalAsValue=true`

OR `/Sites-MobileFirst-Site/en_US/PaypalCreditFinancingOptions-GetAllOptionsData?currencyCode=USD&value=228`

```

▼ {action: "PaypalCreditFinancingOptions-GetAllOptionsData",...}
  action: "PaypalCreditFinancingOptions-GetAllOptionsData"
  locale: "en_US"
  ► lowerCostPerMonth: {value: 10.64, currencyCode: "USD", formatted: "$10.640"}
  ► monthSet: [6, 12, 18, 24]
  ► monthlyPaymentValueSet: [10.64, 13.74, 19.81, 38.63]
  ▼ options: {...}
    ► 6: {term: 6, apr: 2.99, monthlyPayment: {value: 38.63, currencyCode: "USD", formatted: "$38.630"},...}
    ► 12: {term: 12, apr: 5.99, monthlyPayment: {value: 19.81, currencyCode: "USD", formatted: "$19.810"},...}
    ► 18: {term: 18, apr: 8.99, monthlyPayment: {value: 13.74, currencyCode: "USD", formatted: "$13.740"},...}
    ► 24: {term: 24, apr: 9.99, monthlyPayment: {value: 10.64, currencyCode: "USD", formatted: "$10.640"},...}
  queryString: "currencyCode=USD&isGetCartTotalAsValue=true&t=1527669952245"

```

These methods and endpoints can be used for creating custom presentation of Credit options.

### 6.3 Presentment examples

#### 6.3.1 Common integration points for all presentment examples

All presentment examples require including `paypalCreditFinancingOptions.js` and `paypalCreditFinancingOptions.css` files.

For StoreFront it can be done in 2 steps:

1. Insert the static files in appropriate layout template

```

<isscript>
  var assets = require('* /cartridge/scripts/assets');

  assets.addJs('/js/paypalCreditFinancingOptions.js');

  assets.addCss('/css/paypalCreditFinancingOptions.css');
</isscript>

```

2. Include a presentment template in that template where a presentment banner should be shown and set `paypalCalculatedCost` page variable.

`paypalCalculatedCost` should contain cost value (type is `dw.value.Money`) which will be used for Credit calculations.

Examples:

```
<isset name="paypalCalculatedCost"
value="${dw.value.Money(100, 'USD')}" scope="page"/>
<isinclude
template="paypalCreditFinancingOptions/lowerCostPerMonth"/>

OR

<isset name="paypalCalculatedCost"
value="${dw.value.Money(100.5, 'USD')}" scope="page"/>
<isinclude
template="paypalCreditFinancingOptions/lowerCostPerMonthBan
ner"/>

OR

<isset name="paypalCalculatedCost"
value="${dw.value.Money(69.99, 'USD')}" scope="page"/>
<isinclude
template="paypalCreditFinancingOptions/allOptionsBanner"/>
```

After rendering it will look like the following figure:

From \$4.650 per month

OR



**From \$4.670 per month with instalment offers.**  
[Click for details](#)

OR



**Estimate your monthly instalment offer**

6 months	12 months	18 months	24 months
----------	-----------	-----------	-----------

Monthly Payment:	\$3.260
Instalment Rate:	9.99% p.a. (fixed)
Cost of purchase:	\$69.990
Total inc. interest:	\$78.230

[More information](#)

If you are approved for a credit limit with PayPal Credit and use it for future purchases, the APR for those purchases won't be more than 17.9% and may be even lower.

Representative Example:

Purchase Rate: **17.9%** p.a. (variable)  
 Representative: **17.9% APR** (variable)  
 Assumed Credit Limit: **\$69.990**

Subject to status. Terms and Conditions apply.

**Merchant name as on FCA register** acts as a broker and offers credit solely from PayPal (Europe) S.à r.l. et Cie, S.C.A. 22-24 Boulevard Royal, L-2449, Luxembourg

**NOTE:** These banners use PayPal REST API, the service configuration must be done (see the part 6.4.1 Service configuration and credentials). Also, their visibility is depended on configuration in Business Manager > Merchant Tools > Site Preferences > Custom Site Preferences > PayPal Branding (see the part 6.4.2 Presentments visibility configuration).

### 6.3.2 Presentment for category page

The integration point for category page is to include `paypalCreditFinancingOptions/lowerCostPerMonth` template into `productTile.isml` and to set according cost for `paypalCalculatedCost` variable.

File `templates/default/product/productTile.isml`:

```

<iselse>
  <isinclude
template="product/components/pricing/main" />
</isif>

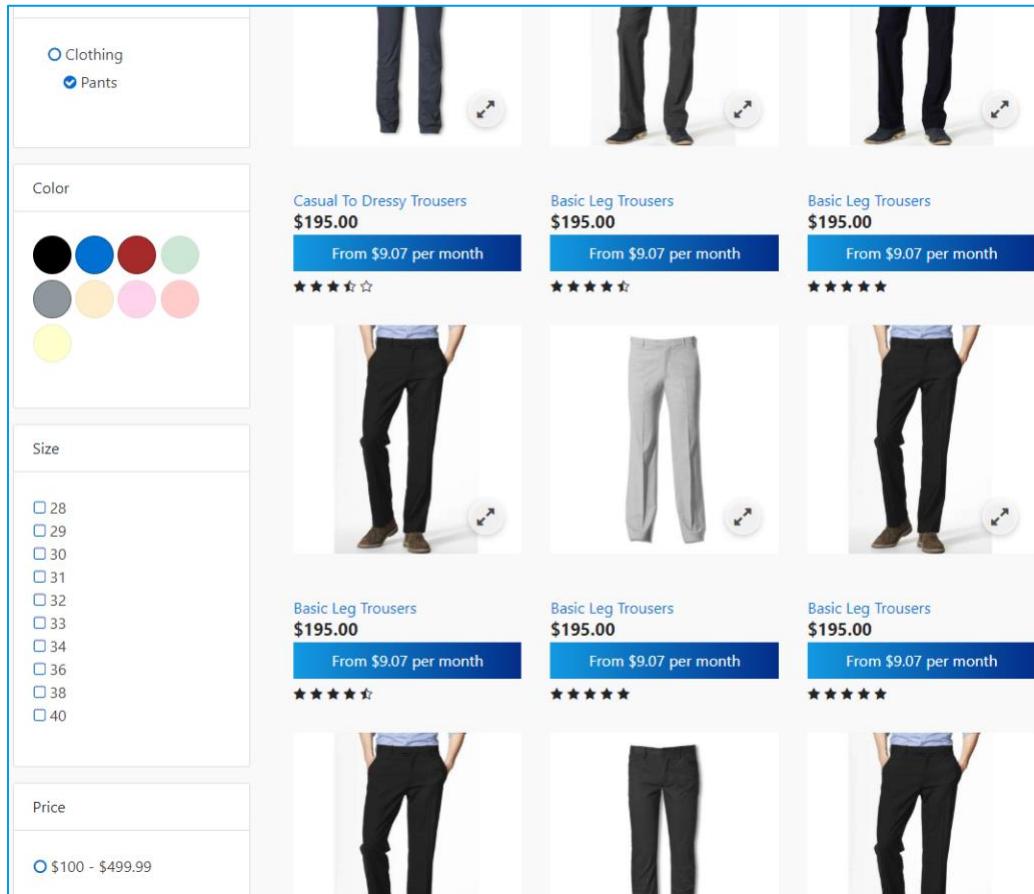
<isset name="paypalCalculatedCost"
value="${product.price.type === 'range' ?
dw.value.Money(product.price.min.sales.value,
product.price.min.sales.currency) :
dw.value.Money(product.price.sales.value,
product.price.sales.currency)}" scope="page"/>
```

```

<isinclude
template="paypalCreditFinancingOptions/lowerCostPerMonth"/>

<isif condition="${pdict.display.ratings} != false">
    <isinclude template="product/productTileFooter"
/>
</isif>

```



### 6.3.3 Presentment for product details page

The integration point for PDP is to include `paypalCreditFinancingOptions/lowerCostPerMonthBanner` template into `descriptionAndDetails.isml` and to set according cost for `paypalCalculatedCost` variable.

File `templates/default/product/components/descriptionAndDetails.isml`

```

<div class="description-and-detail">

    <isset name="paypalCalculatedCost"
value="${dw.value.Money(price.value, price.currency) }"
scope="page"/>

```

```

<isinclude
template="paypalCreditFinancingOptions/lowerCostPerMonthBan
ner"/>

<div class="row product-attributes collapseable-xs">
<isinclude template="product/components/attributes"
/>
</div>

```

The screenshot shows a product detail page for 'Casual To Dressy Trousers'. At the top, there's a navigation bar with 'Login', the 'salesforce commerce cloud' logo, a search bar, and a shopping cart icon showing '1'. Below the navigation, there are category links: 'New Arrivals', 'Womens', 'Mens', and 'Electronics'. The main content area features a large image of the trousers on the left and product details on the right. The product title is 'Casual To Dressy Trousers' with an item number 'Item No. 683360520599M'. It has a 4-star rating. Below the title, there are dropdown menus for 'Select Color' (with 'Black' selected) and 'Select Size' (set to '30'). A quantity selector shows '1'. The price is listed as '\$195.00' with a blue 'Add to Cart' button. Below the price, social sharing icons for Pinterest, Instagram, Facebook, and Twitter are present. A 'PayPal CREDIT' banner at the bottom offers financing from '\$9.07 per month'. The 'Description' section includes a detailed product description: 'Not your typical trousers, these straight leg pants are the perfect casual-to-dressy building block. Pair with a tee or a refined button-down. Made in our stretch cotton twill fabric.'.

Clicking on “Click for details”, will extend the banner.

**NOTE:** int\_paypal\_sfra contains a lot of examples how to use these banners  
(search by “paypalCreditFinancingOptions” keyword)

## 6.4 Configuration

### 6.4.1 Service configuration and credentials

1. Go to **Business Manager > Administration > Operations > Services > Credentials**. Create new credentials for PayPal REST API. Fields Name, URL, User, Password are required.

Administration > Operations > Services > Paypal\_REST\_Vigr\_UK - Details

### Paypal\_REST\_Vigr\_UK

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 2 services.

Name:*	Paypal_REST_Vigr_UK	Client ID
URL:	https://api.sandbox.paypal.com/	Secret
User:	AWLvojdrG8Ga60b5lmkiSyukGGmEOi0h413Mo5RQ4xvcWF	
Password:	.....	

**PayPal**

**It is production credentials:**

**Use certificate:**

**API Signature:**

2. Go to **Business Manager > Administration > Operations > Services > Services**. Create new service for PayPal REST API. Name (ID) of service must be `int_paypal.http.rest.payment.PayPal.{SITE_ID}`.

Administration > Operations > Services > int\_paypal.http.rest.payment.PayPal.MobileFirst - Details

## int\_paypal.http.rest.payment.PayPal.MobileFirst ?

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="int_paypal.http.rest.payment.Pay"/>
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="MFRA_REST"/>
Communication Log Enabled:	<input checked="" type="checkbox"/>
Force PRD behavior in non-PRD environments:	<input checked="" type="checkbox"/>
Profile:	<input type="text" value="PayPal_Default_Profile"/>
Credentials:	<input type="text" value="Paypal_REST_Vigr_UK"/>

Apply Reset

#### 6.4.2 Presentments visibility configuration

The configuration page **Business Manager > Merchant Tools > Site Preferences > Custom Site Preferences > PayPal Branding** has two fields related with this functionality:

1. **Enable PayPal UK Credit Financial Options Banners** – solves visibility of all presentments.
2. **Password to enable PayPal UK Credit Financial Options Banners** – should be set password which was provided by your PayPal representative.

Merchant Tools / Site Preferences / Custom Site Preference Groups / PayPal Branding ?

Cancel Apply to Other Sites Save

Name	Value	Default Value
Enable PayPal UK Credit Financial Options Banners	<input type="text" value="Yes"/>	No
Password to enable PayPal UK Credit Financial Options Banners	<input type="text" value="XXXX"/>	<span>Edit Across Sites</span>

Reach out to your PayPal representative to obtain this value

## 7 PayPal Marketing Solutions

### 7.1 Overview

Get powerful marketing tools designed to help increase your sales. Your PayPal Business account now includes unique shopper insights and customizable incentives from PayPal for your website, at no extra cost.

For more information visit <https://www.paypal.com/marketingolutions>.

FREE 2-Day SHIPPING FOR ORDERS OVER \$300

Login salesforce commerce cloud Search (keywords,etc) 

New Arrivals ▾ Womens ▾ Mens ▾ Electronics ▾



## Casual To Dressy Trousers

Item No. 42416786-2M ★★★★☆

Select Color 

Select Size  Quantity

Availability: Select Styles for Availability

**\$195.00** 

Add to Wishlist 

Description Not your typical trousers, these straight leg pants are the perfect casual-to-dressy building block. Pair with a tee or a refined button-down. Made in our stretch cotton twill fabric.

Details

- 97% cotton, 3% lycra
- clean 5-pocket denim
- st
- b


**Fast checkout with PayPal**  
Now easier and faster with One Touch™ 

FREE 2-Day SHIPPING FOR ORDERS OVER \$300

Login salesforce commerce cloud Search (keywords,etc) 

New Arrivals ▾ Womens ▾ Mens ▾ Electronics ▾



## Casual To Dressy Trousers

Item No. 42416786-2M ★★★★☆

Select Color 

Select Size  Quantity

Availability: Select Styles for Availability

**\$195.00** 

 Speed through checkout with One Touch™ 

Enabling One Touch allows you to check out with just a few clicks of a button. Once activated, shop from site to site on your enabled device without logging into your PayPal account or filling out your billing information.

To enable One Touch, select "Stay logged in for faster purchases" when checking out with PayPal today. [Learn more](#)

Description building block. Pair with a tee or a

Details

## 7.2 Integration points

Implementing this feature requires to first include a template in an appropriate StoreFront template and then to set one configuration field in Business Manager.

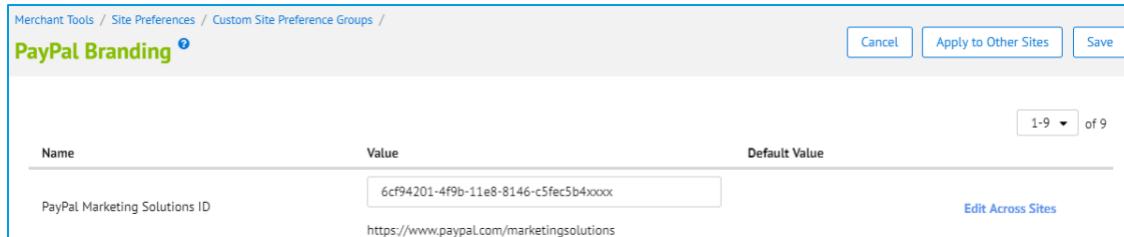
If banner should be on all pages, the template `paypal/marketingSolutions` must be included at the end of file  
`templates/default/common/scripts.isml`

```
<script type="text/javascript"
src="${URLUtils.staticURL('/js/main.js')}"></script>
<isloop items="${
require('*/cartridge/scripts/assets.js').scripts }"
var="script">
  <script type="text/javascript"
src="${script}"></script>
</isloop>

<isinclude template="paypal/marketingSolutions"/>
```

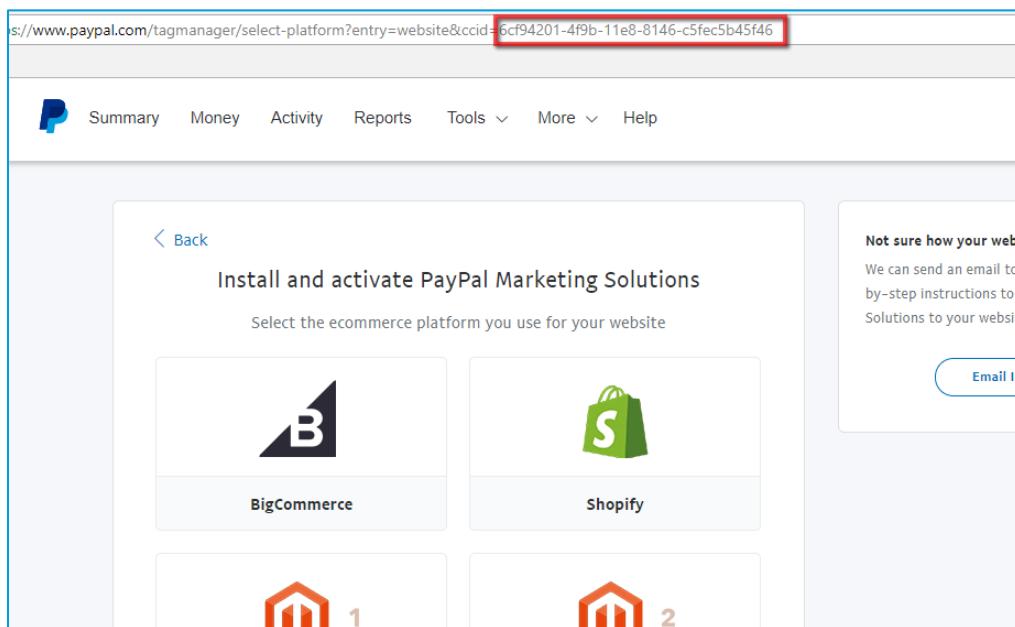
If banner should be on specific pages, the template `paypal/marketingSolutions` must be included into a appropriate decorator or common templates.

Second required step is setting **PayPal Marketing Solutions ID** configuration field in **Business Manager > Merchant Tools > Site Preferences > Custom Site Preferences > PayPal Branding**.



Name	Value	Default Value
PayPal Marketing Solutions ID	6cf94201-4f9b-11e8-8146-c5fec5b4xxxx	

PayPal Marketing Solutions ID can be retrieved by visiting [this](#) link and clicking on "Other". It is posted in the url or in the code snippet as shown in the figure below.



www.paypal.com/tagmanager/install?entry=website&ccid=6cf94201-4f9b-11e8-8146-c5fec5b45f46

 Summary Money Activity Reports Tools More Help

[Back](#)

## Installation instructions

Follow these steps to add PayPal Marketing Solutions to your website.

[Need help?](#)

```
<!-- PayPal BEGIN --> <script> ;(function(a,t,o,m,s){a[m]=a[m]||[];a[m].push({t:n(o),d=m=='paypalDDL'?'&m='+m:'';e.async=!0;e.src='https://www.paypal.com/tagma paypalDDL','6cf94201-4f9b-11e8-8146-c5fec5b45f46');}</script> <!-- PayPal EN
```

[Copy to clipboard](#)

---

INSTRUCTIONS

1. Open the **HTML** file for one of your web pages using your text editor or the editing tool provided by your website platform.
2. Locate the section of the code that begins with **<head>** and ends with **</head>**. This is the head section and typically is located at the beginning of the **HTML** file.

Head Begins

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=1">
    <link rel="icon" href=".../favicon.ico">
    <title>Your Website Title</title>
    <!-- Custom styles for this template -->
    <link href="offcanvas.css" rel="stylesheet">
```

**Send instruction**  
We can send an e-mail with step-by-step instructions for adding PayPal Marketing Solutions to your website.

**Using a different website platform?**

-  Shopify
-  Magento
-  WooCommerce
-  WordPress
-  Other platforms

---

## 8 Known Issues

No reported issues so far.