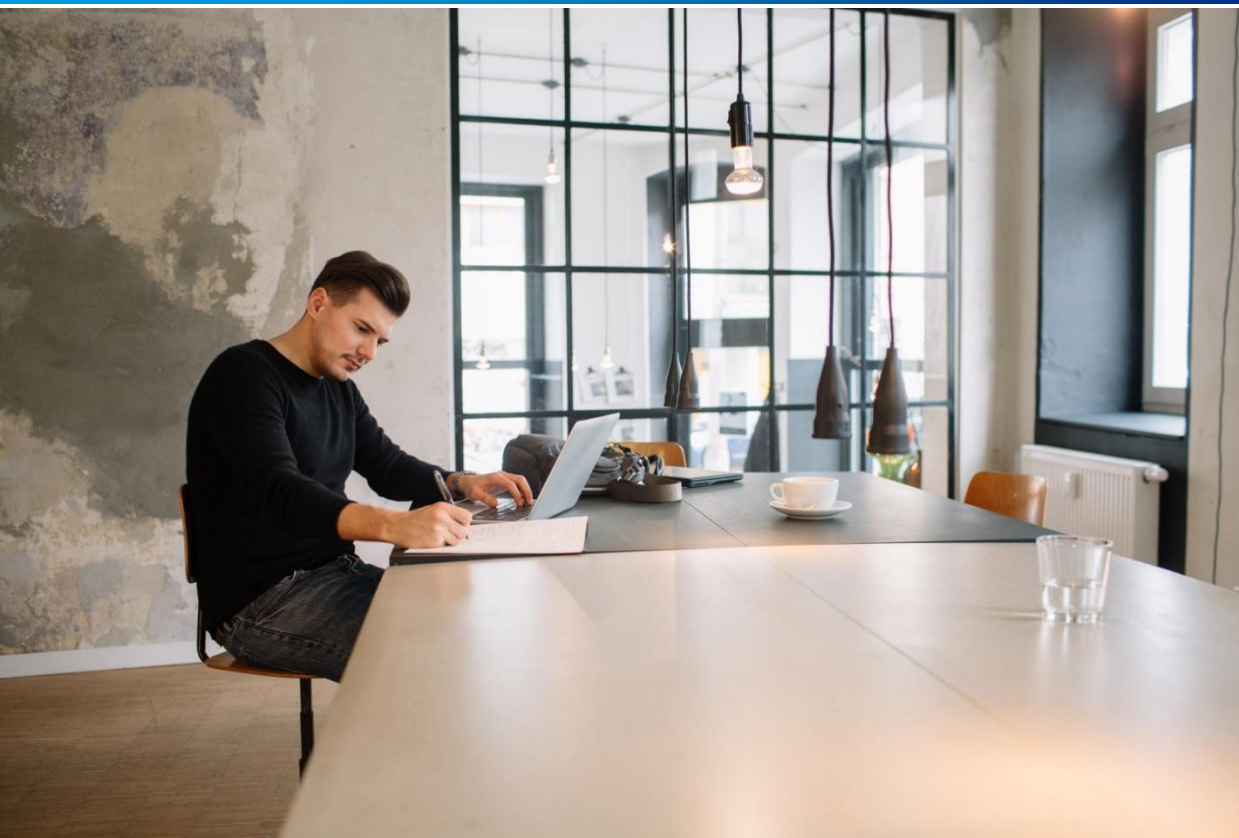




# PayPal Express Checkout Add-on for Hybris 2005-2205

USER GUIDE



SAP Hybris (v)

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# 1 Introduction

This document contains the functional description and installation guideline of the PayPal Checkout Add-on. The primary goal is to help you integrate a complete PayPal flow with Hybris Commerce Suite versions 2005-2205. This document will also provide some details around the implemented features (such as PayPal Smart Payment Buttons) and how they need to be configured. The PayPal functionality described here is intended to be a generic business use case and may require a previously customized checkout experience to be modified further to support the PayPal Add-on.

**Note:** It is recommended that the installation and integration of this extension will be done by a “SAP Certified Development Professional”.

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## 2 About this Document

### 2.1 Acronyms and Abbreviations

Acronym	Description
B2C	Business-to-Customer e-commerce Channel.
B2B	Business-to-Business e-commerce Channel.
Hybris Platform initialization	Initialization drops existing type definitions from the database. The entire type system is created from scratch.
HAC	Hybris Administration Console. Used by system administrators to manage/configure the Hybris engine.
Backoffice	Successor or replacement for HMC. Since Hybris-6.7, HMC is not available.
CMS	Content Management System.
Responsive design	Application design that adapts the presentation to the device it is rendered on.
REST	Architectural style for providing standards between computer systems on the web.
Merchant's PayPal account	Merchant's PayPal business account.
PayPal Smart Payment Buttons	Smart Payment Buttons (SPB) provide a set of payment instruments that can be used by buyers and processed through PayPal. The Smart Payment Button code is integrated through PayPal's JS SDK.

Before installing and integrating a solution into your merchant code base, it's recommended that you get a sample store working with the help of this guide.

---

## 3 Delivered Package Description

The package includes the following folders:

Folder	Description
docs_release	Contains documentation for the release, including this guide.
extensions	Contains solution source code.
samples	Contains sample Bash-script and properties files. Bash-script shows how to rollout solution from scratch with Hybris B2C and B2B sample stores (Electronics for B2C, PowerTools for B2B).

## 4 Supported Versions, Configurations, Features

### 4.1 Supported Hybris versions and PayPal features

The table below shows supported versions and features.

Feature \ Version	Hybris B2C	Hybris B2B
Guest checkout	+	N/A
Logged in checkout	+	+
Express Checkout Flow	+	+
Multi-step checkout	+	+
Replenishment order	N/A	+
PayPal Smart Payment Buttons configuration (HAC)	+	+
Backoffice extension	+	+
PayPal billing agreement flow	+	+
PayPal static image checkout	+	+
PayPal Credit Banner	+	+
Local Payment Methods	+	+
PayPal Pay Later Offers	+	+
Venmo Payment Method	+	+
Connect with PayPal feature	+	+
Webhooks (Cancel Billing Agreement webhook, Authorize\capture\void webhooks)	+	+

### 4.2 PayPal API calls

API call \ Solution	Hybris B2C	Hybris B2B
Render button	+	+
Create PayPal Order	+	+
Update Order	+	+
Get Order Details	+	+
Create Billing Agreement Token	+	+
Create Billing Agreement	+	+
Authorization	+	+
Reauthorization	+	+
Authorization Void	+	+
Capture	+	+
Refund	+	+

This solution uses PayPal's JS SDK for the UI layer and JAVA SDK and direct API requests for backend calls.

## 5 Solution Installation

This section reviews setting up the solution in a development environment.

### 5.1 Prerequisites

#### 5.1.1 Software

Before continuing, make sure you have configured your environment as follows:

- Linux-system, 64-bit
- Oracle JDK:
  - Oracle JDK 11, 64-bit (For Hybris 2005-2105)
  - Oracle JDK 17, 64-bit (For Hybris 2205)
- Configured JAVA\_HOME environment variable
- Configured Ant-1.9.1+
- Hybris package, with supported version

#### 5.1.2 OS-level file “hosts”

Add the following two lines to update your local OS-level “hosts” file:

```
127.0.0.1 localhost
127.0.0.1 electronics.local powertools.local
```

### 5.2 Package Installation

#### 5.2.1 B2C Installation

Required files to set up 2011 sample store with PayPal.

File	Description
CXCOMM201100P_XXXX.ZIP	Hybris 2011 package
paypal_rest_1.X.X.X.zip	Delivered package

1. Copy the files to the directory you want to use as your “working” directory.
2. Unzip “paypal\_rest\_1.X.X.X.zip”.
  - a. Rename the unzipped folder “paypal\_rest\_1.X.X.X” to “plugin”.
3. Copy “/plugin/samples/prepare.sh” into the “working” directory.

The “working” directory should now contain four items:

File	Description
prepare.sh	Extracted Bash-script from delivered package
CXCOMM201100P_XXXX.ZIP	Hybris 2011 package
paypal_rest_1.X.X.X.zip	Delivered package
plugin	Unzipped folder containing contents of paypal_rest_1.X.X.X.zip



#### 4. Configure prepare.sh

- a. Enter “working” directory and open console and run command:
  - ./prepare.sh
- b. Enter path to HYBRIS.ZIP
- c. Enter the name of the folder where the hybrid project will be located (default - hybris)
- d. Choose yes if you agree with the version of hybris (this version of hybris is taken from the archive that you specified)
- e. Choose accelerator (for B2C accelerator choose b2c)
- f. Choose yes if you will install Spartacus in future
- g. This results in a working test store for merchant developers, who will see how the solution was rolled out and how it works with the default store.
- h. It is recommended that you review the "prepare.sh" script to see how it creates the environment and builds the platform.

#### Errors when executing “prepare.sh”

- Unzipping the Hybris package may display a “cannot create” error for a “.html” file.
  - The installation will continue and should not be impacted.
- “-bash: ant: command not found” error
  - May require running “setantenv.sh” before “prepare.sh” can be run.
  - It is recommended to open “prepare.sh” and run the lines individually from the “working” directory, starting with “cd hybris-2011/hybris/bin/platform”.
- “file not found” errors
  - Double-check that the “working” directory structure and “prepare.sh” contents match up.
- This installation can take 15 minutes to run, possibly more.
- “sudo” may be required to run the “ant” commands.
- To restart the test store, run “./hybrisserver.sh” from the “hybris-2011/hybris/bin/platform” folder.
- Hybris test stores are valid for 30 days.
  - To re-initialize, run “ant clean all initialize” from the “hybris-2011/hybris/bin/platform” folder.

Once you got access to the test store, you can continue with Solution Configuration.

##### 5.2.1.1. URLs, credentials

Application	URL, Default Login / Password
Electronics site	<a href="https://electronics.local:9002/yacceleratorstorefront">https://electronics.local:9002/yacceleratorstorefront</a> Guest access allowed. acceptanceuser@test.com / 12341234

## 5.2.2 B2B Installation

Please use the installation steps listed in section 5.2.1, B2C Installation, updating step 5.d:

1. Choose accelerator (for B2B accelerator choose b2b)

Once you got access to the test store, you can continue with Solution Configuration.

### 5.2.2.1. URLs, credentials

Application	URL, Default Login / Password
PowerTools site	<a href="https://powertools.local:9002/yb2bacceleratorstorefront">https://powertools.local:9002/yb2bacceleratorstorefront</a> Guest access not allowed. axel.krause@rustic-hw.com / 12341234 ulf.becker@rustic-hw.com / 12341234

## 5.3 Package Installation step-by-step with a hybris.zip archive

The instructions below are general for all 2005-2205 Hybris versions.

Use this guide if prepare.sh isn't working or you're using Windows OS.

Required files to set up 2011 sample store with PayPal.

File	Description
CXCOMM201100P_XXXX.ZIP	Hybris 2011 package
paypal_rest_1.X.X.X.zip	Delivered package

1. Copy the files to the directory you want to use as your “working” directory.
2. Unzip “paypal\_rest\_1.X.X.X.zip”.
  - a. Rename the unzipped folder “paypal\_rest\_1.X.X.X” to “plugin”.
3. Unzip “CXCOMM201100P\_XXXX.zip”.
  - a. Rename the unzipped folder “CXCOMM201100P\_XXXX” to “hybris”.
4. The “working” directory should now contain four items:

File	Description
hybris	Unzipped folder containing contents of CXCOMM201100P_XXXX.ZIP
CXCOMM201100P_XXXX.ZIP	Hybris 2011 package
paypal_rest_1.X.X.X.zip	Delivered package
plugin	Unzipped folder containing contents of paypal_rest_1.X.X.X.zip

5. Copy directory “extensions” from “/plugin” directory into the “/hybris/hybris/bin” directory and rename directory “extensions” into “/hybris/hybris/bin” folder to “paypal\_custom”.

6. Copy directory paypal\_recipe from “/plugin/sample/2011-b2c” directory into the “/hybris/installer/recipes” directory.

**Decrypt the folder name:**

- 2005-2205 - hybris version (This version should be the same as the archive version of hybris)
- b2c, b2b - accelerator version(B2C accelerator or B2B accelerator)
- spa - this folder contains settings for future installation of Spartacus.

7. Enter into directory “/hybris/installer” and open console and run command:

- For Linux (./install.sh -r paypal\_recipe) or for Windows (install.bat -r paypal\_recipe);

8. Close console.

9. Enter into directory “/hybris/hybris/bin/platform” and open console and run all commands :

- For Linux (. ./setantenv.sh) or for Windows (setantenv.bat);
- ant clean all initialize
- For Linux (./hybrisserver.sh) or for Windows (hybrisserver.bat);

10. Done.

This results in a working test store for merchant developers, who will see how the solution was rolled out and how it works with the default store.

**11. URLs credentials are the same as:**

- B2C accelerator - 5.2.1.1 section
- B2B accelerator - 5.2.2.1 section

#### 5.4 Package Installation step-by-step with a working project

1. Unzip “paypal\_rest\_1.X.X.X.zip”.
2. Enter to the unzipped folder and copy the folder 'extensions' to your project in the folder '<project-name>/hybris/bin' and you can rename this folder to 'paypal\_custom'.
3. Enter to the unzipped folder '/sample/your version hybris and storefront/paypal\_recipe' and open the file 'build.gradle' and copy all 'property' that is not in your file '<project-name>/hybris/config/local.property' and insert into this file all copied properties.

**Decrypt the folder name:**

- 2005-2205 - hybris version (This version should be the same as a working project)
- b2c, b2b - accelerator version (B2C accelerator or B2B accelerator)

- spa - this folder contains settings if working project works with Spartacus.
4. Enter to the unzipped folder '/sample/your version hybris and storefront/paypal\_recipe' and open the file 'build.gradle' and copy all custom extensions from '//Start PayPal custom extensions' comment to '//End PayPal custom extensions' comment and insert into the file 'localextensions.xml' in your project '<project-name>/hybris/config/localextension.xml'.
  5. Enter to your project '<project-name>/hybris/bin/platform' folder open console and run commands:

- B2C accelerator

```
ant addoninstall -Daddonnames="paypaladdon" -
DaddonStorefront.yacceleratorstorefront="yacceleratorstorefront"
```

- B2C accelerator + Spartacus

```
ant addoninstall -Daddonnames="paypaladdon" -
DaddonStorefront.yacceleratorstorefront="yacceleratorstorefront"
ant addoninstall -Daddonnames="paypaloccaddon" -
DaddonStorefront.ycommercewebservices="ycommercewebservices"
```

- B2B accelerator (2005-2105 HYBRIS versions)

```
ant addoninstall -Daddonnames="paypalb2baddon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
ant addoninstall -Daddonnames="paypalb2bregistrationaddon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
```

- B2B accelerator + Spartacus (2005-2105 HYBRIS versions)

```
ant addoninstall -Daddonnames="paypalb2baddon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
ant addoninstall -Daddonnames="paypalb2bregistrationaddon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
ant addoninstall -Daddonnames="paypalb2boccaddon" -
DaddonStorefront.ycommercewebservices="ycommercewebservices"
```

- B2B accelerator (2205 HYBRIS versions)

```
ant addoninstall -Daddonnames="paypalb2baddon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
ant addoninstall -Daddonnames="paypalb2bregistration2205addon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
```

- B2B accelerator + Spartacus (2205 HYBRIS versions)

```
ant addoninstall -Daddonnames="paypalb2baddon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
ant addoninstall -Daddonnames="paypalb2bregistration2205addon" -
DaddonStorefront.yacceleratorstorefront="yb2bacceleratorstorefront"
ant addoninstall -Daddonnames="paypalb2boccaddon" -
DaddonStorefront.ycommercewebservices="ycommercewebservices"
```

## 6. Build, initialize, start

```
ant clean all initialize
./hybrisserver.sh
```

\* hybrisserver.bat for Windows OS

## 7. Done

This results in a working test store for merchant developers, who will see how the solution was rolled out and how it works with a working project.

## 5.5 Hybris Out of the Box Applications

Hybris provides the following applications out of the box. URLs are common for Hybris B2C, B2B.

Application	URL, Default Login / Password
HAC	<a href="https://localhost:9002/hac">https://localhost:9002/hac</a> admin / nimda or nimdar00t
Backoffice	<a href="https://localhost:9002/backoffice">https://localhost:9002/backoffice</a> admin / nimda or nimdar00t
B2C storefront	<a href="https://electronics.local:9002/yacceleratorstorefront">https://electronics.local:9002/yacceleratorstorefront</a>
B2B storefront	<a href="https://powertools.local:9002/yb2bacceleratorstorefront">https://powertools.local:9002/yb2bacceleratorstorefront</a>

## 6 Solution Configuration

### 6.1 Backend configuration, local.properties (Persisted)

For each Hybris instance, please review and update the next properties in the local.properties file.

Solution connectivity properties:

Property	Comment
paypal.username	Merchant account API user name.
paypal.password	Merchant account API password.
paypal.signature	Merchant account API signature.
paypal.seller.email	Merchant account API e-mail.
paypal.environment.configuration.type	Profile name, case sensitive, either "sandbox" or "production"
paypal.client.id	Application Client ID
paypal.secret.key	Application Secret

Solution properties (default values in bold); change in **project.properties** or **hac**:

Property	Values supported	Comment
paypal.intent	<b>authorize</b> capture	<ul style="list-style-type: none"><li>authorize – place funds on hold</li><li>capture – capture payment immediately</li></ul>
paypal.billing.agreement.enabled	<b>true</b> false	Toggle for a billing agreement flow. It allows saving payment info for later use. Billing Agreements will also be used in replenishment orders (B2B only)
paypal.express.checkout.enabled	<b>true</b> false	Toggle for an express checkout. PayPal button will be rendered only on a billing page, if disabled.
paypal.billing.agreement.description.custom	<b>EMPTY</b> String	The buyer will see this within the PayPal Billing Agreement checkout experience
paypal.disable.funding.mini.cart	<b>card,credit,venmo</b>	Disables payment methods for the mini cart.
paypal.disable.funding.cart.page	<b>card</b>	Disables payment methods for the cart page.
paypal.disable.funding.mark.page	<b>EMPTY</b>	Disables payment methods for the billing page.
paypal.credit.messages.enabled	<b>true</b> false	Render Credit banners at cart page, category page, product details page
paypal.custom.billing.agreement.description	<b>EMPTY</b>	Define the message which will be passed to PayPal during billing agreement flow
lpm.locale	<b>en_US</b>	For LPM testing on the sandbox

lpm.buyer.country	DE	For LPM testing on the sandbox
paypal.paylater.for.non.us.countries	true false	Allows using rendering PayLater buttons (EC and Mark Checkout) for non-US based buyers
paypal.venmo.enabled	true false	Enables Venmo payment method

**NOTE:** See [Disable Funding](#) for more Info

## 6.2 Backend configuration, HAC (Non-Persisted)

Using HAC, it is possible to change properties at runtime, however, the next time Hybris is restarted, they will be returned to persisted values.

See a sample screenshot of PayPal properties below:

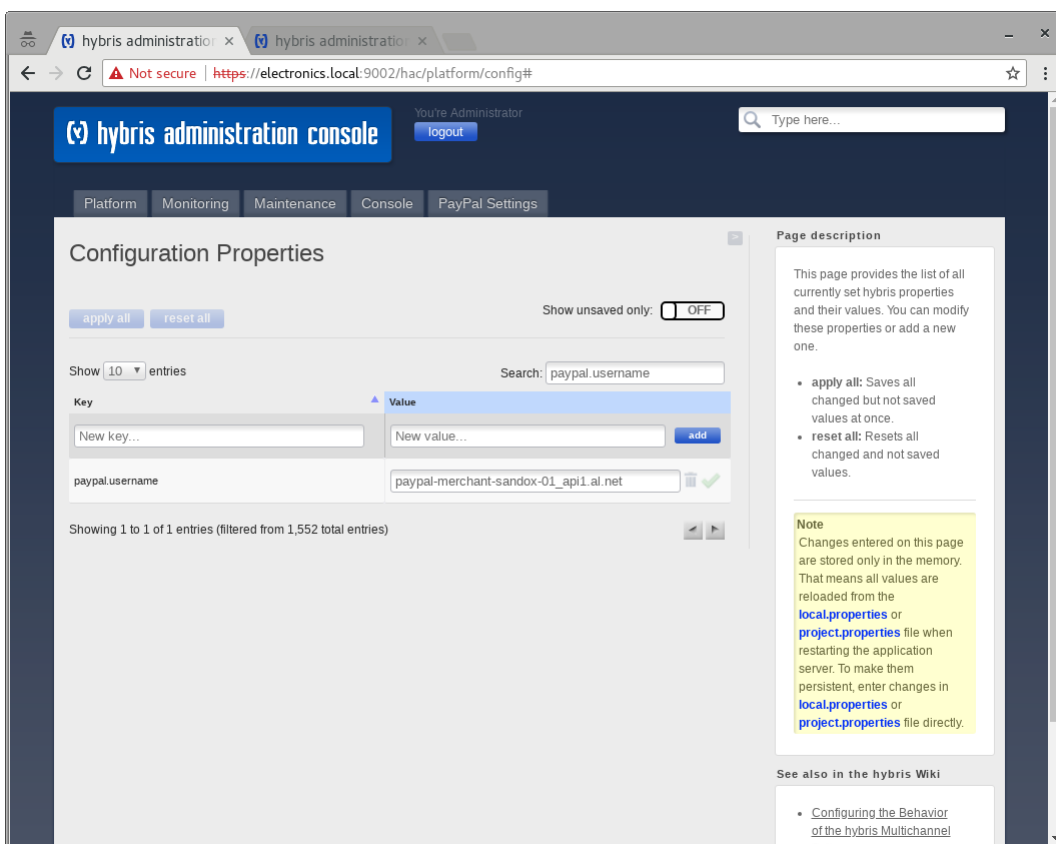


Figure 1. Configuration Properties

## 6.3 PayPal Smart Payment Buttons Configuration

This solution supports the usage of HAC to configure PayPal Smart Payment Buttons. An administrator can configure Button properties that are new and not yet implemented within SAP. In that case, the application behavior should be tested for all flows.

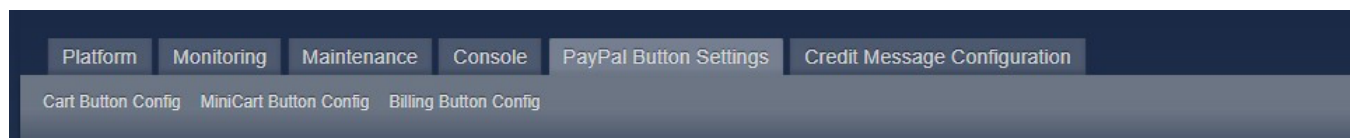
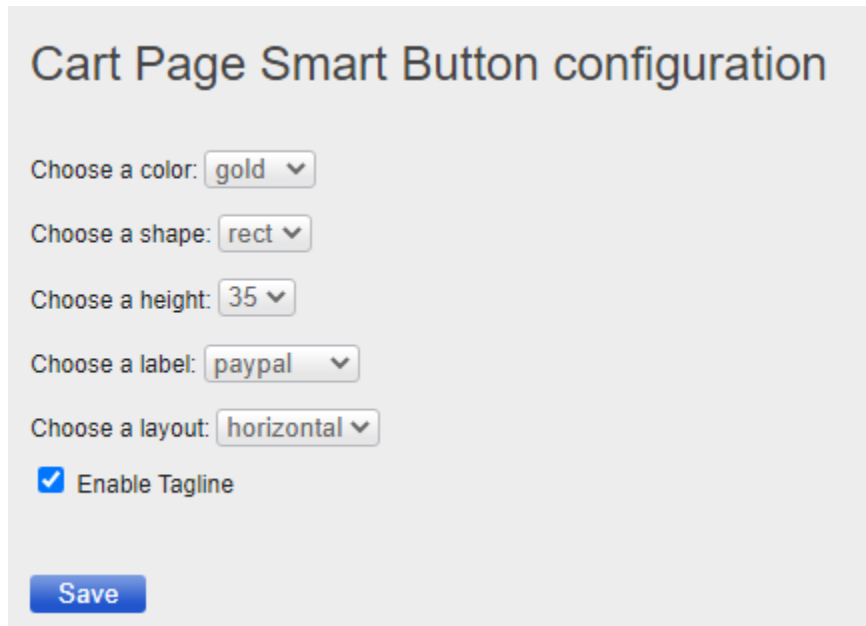


Figure 2. PayPal Smart Payment Button Config

**NOTE:** Please be informed that these values are stored in the Hybris local file system in the following file. This file is not cluster-aware, thus if you have a clustered environment, make sure you deliver the correct content of that file on each node.

hybris-runtime/hybris/config/paypalbuttonconfig.properties

All three smart payment buttons can be configured Independently of each other.



Cart Page Smart Button configuration

Choose a color: gold

Choose a shape: rect

Choose a height: 35

Choose a label: paypal

Choose a layout: horizontal

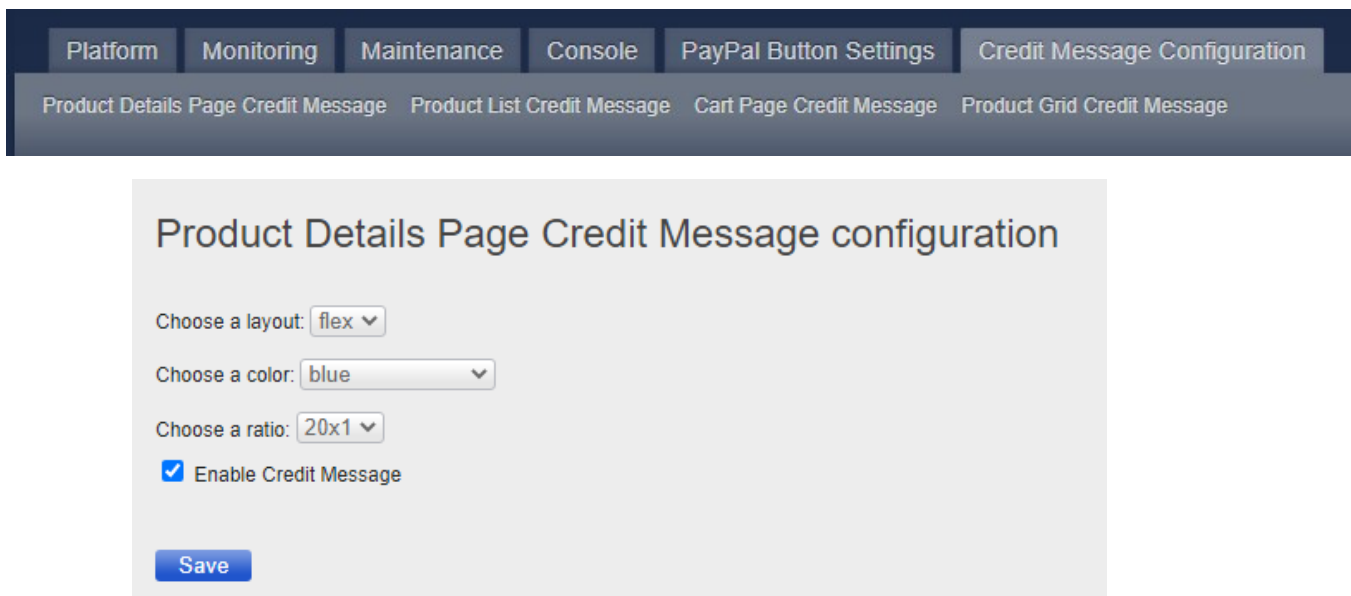
☒ Enable Tagline

Save

The same widget is available for MiniCartButton and BillingPageButton.

## 6.4 PayPal Credit Message Configuration

This solution supports the usage of HAC to configure PayPal Credit Messages.



Platform Monitoring Maintenance Console PayPal Button Settings Credit Message Configuration

Product Details Page Credit Message Product List Credit Message Cart Page Credit Message Product Grid Credit Message

Product Details Page Credit Message configuration

Choose a layout: flex

Choose a color: blue

Choose a ratio: 20x1

☒ Enable Credit Message

Save

Figure 3. PayPal Product Details Credit Message Config



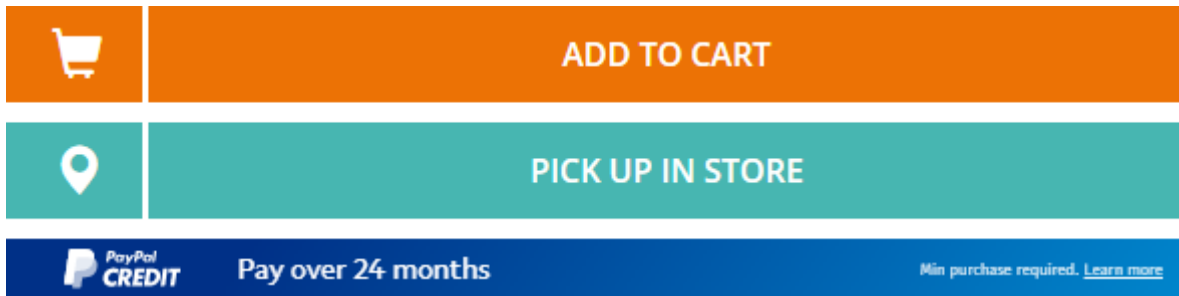


Figure 3. PayPal Product Details Credit Message View

**NOTE:** Changing the layout to text will add additional config parameters.

### Product Details Page Credit Message configuration

Choose a layout:

Choose a logo type:

Choose a logo position:

Choose a text color:

☒ Enable Credit Message

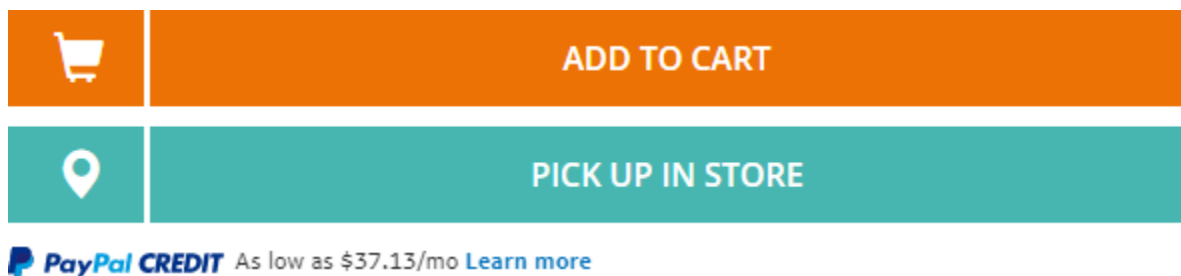


Figure 4. PayPal Product Details Credit Message View as text layout

## 6.5 PayPal Webhooks Configuration

There are configured Listener for the following Webhooks:

- ☒ Payment capture completed
- ☒ Payment capture denied
- ☒ Payment capture pending

Webhooks endpoint: /paypal/webhook/capture

Capture events work In the following way:

If there Is an existing Capture transaction this transaction status will be updated at Hybris suite according to the status from the event.

If Capture transaction doesn't exist -> It will be created (e.g. intent = authorize scenario)

And separate endpoint (paypal/webhook/order/approved) for:

- ☒ Checkout order completed

It's used for completing Local Payments If the user leaves the site. Order will be placed automatically when the Event comes.

For details check `com.paypal.hybris.addon.controllers.webhook.WebhookListener`

## 6.6 Connect with PayPal Button Configuration

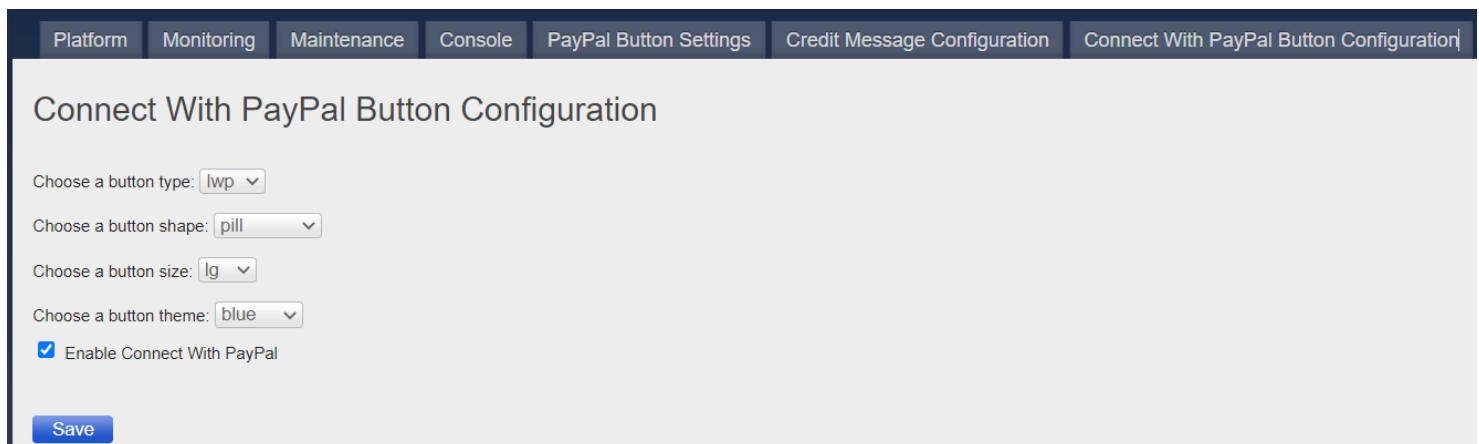


Figure 5. Connect with PayPal Button Configuration

It is possible to configure the following:

- Button type (Connect with PayPal or Login With PayPal);
- Button shape (pill or rectangle);
- Button size (small, medium, large);
- Button theme (blue or neutral);

Also, you can hide/unhide Connect with PayPal button with the help of the 'Enable Connect With PayPal' checkbox.

---

## 7 Move to Production

**NOTE:** Before moving the solution to your Production system, it is highly recommended that you test and validate the solution in a test / sandbox environment.

To run the solution in production, update the following properties:

Property	Comment
paypal.username	Merchant account API user name.
paypal.password	Merchant account API password.
paypal.signature	Merchant account API signature.
paypal.seller.email	Merchant account API e-mail.
paypal.environment.configuration.type	Profile name, case sensitive, shall be set to "production" value.
paypal.client.id	Application Client ID.
paypal.secret.key	Application Secret.

## 8 Solutions Limitation

Limitation	Comment
“paypal.intent” property runtime configuration	<p>The property can be changed on runtime, but placed and not processed orders will be processed with the Intent they had while being placed.</p> <p>To be on the safe side, it is recommended to configure it once and use that value across the cluster environment, making sure that the same and correct value is deployed for any single server instance.</p>
Single merchant per Hybris Setup	The solution supports one <b>PayPal</b> merchant account per <b>Hybris</b> Setup.
Actions from PayPal	Any action made directly on the <b>PayPal</b> site will not be reflected in the <b>Backoffice</b> .