



Sitecore E-Commerce Services 2.2 on CMS 7.0 or Later Payment Provider Guide

The payment methods supported by the Sitecore E-Commerce Services

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Chapter 1

Introduction

Online payment methods allow payments and money transfers to be made over the Internet. Payment portals are an electronic alternative to traditional paper methods of payment such as checks and money orders which have been involved in many cases of litigation concerning fraud.

Sitecore E-Commerce Services can be integrated with several different online payment services. These services accept electronic payments by a variety of payment methods including credit cards, bank-based payments, such as direct debit, bank transfer, and real-time bank transfer based on online banking.

Sitecore distributes a number of packages that contain payment providers. The payment provider packages contain the code and the Sitecore item you need to configure the payment options on your webshop that use the different online payment services.

This document contains the following chapters:

- **Chapter 1 — Introduction**
This chapter lists the different payment providers that are supported by Sitecore E-Commerce Services and describes how to install them.
- **Chapter 2 — Integrating a Payment Provider**
This chapter describes how Sitecore E-Commerce Services integrates with payment providers.
- **Chapter 3 — Payment Option Configuration**
This chapter describes how to configure a payment option in Sitecore E-Commerce Services.

1.1 Terminology

Payment Service

Payment service is an external internet service that facilitates online payments. A payment service is a third party organization. If you want to use a particular payment service, such as Amazon, you must install and configure the payment provider for this payment service.

Payment Gateway

Payment gateway is the user interface of a payment service to which a customer is redirected from the webshop during payment. When the payment is completed, the customer is redirected back to the webshop.

Payment Provider

Payment provider is a client implementation in your webshop that makes it possible to use a particular payment service during a payment. A payment provider is a class that interacts with the corresponding payment service (for example, PayPal) using the corresponding payment system settings.

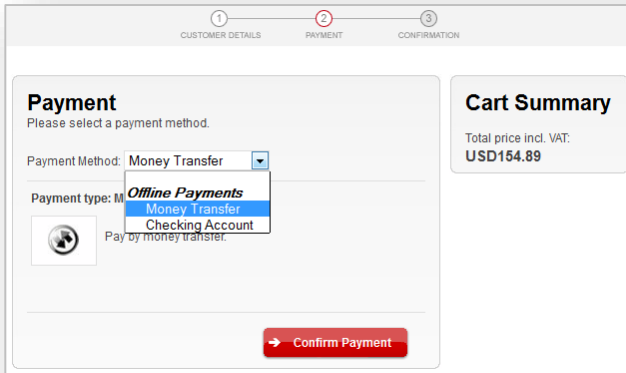
Payment Option

A payment option is a set of configuration settings for a payment provider. A payment option typically includes the following settings:

- URL of the payment service
- Webshop Name
- Merchant ID
- Password

1.2 Payment Options in the Example Pages

In the *Example Pages* package, the *Payment* page is the second page in the checkout process. In the example pages the *Payment* page displays the following options.

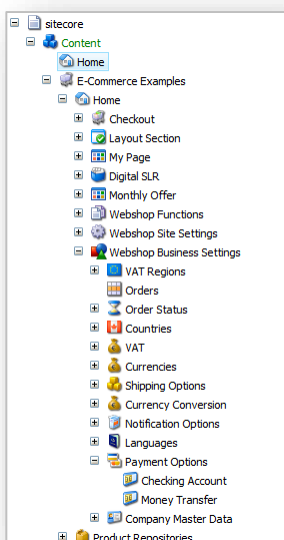


Sitecore also distributes a number of packages that contain payment providers. These payment provider packages contain the code and the item you need to configure the corresponding payment option.

You can install as many of these packages as you need in your E-Commerce Services solution. You can also implement various credit card solutions.

On the *Payment* page, you decide how to pay for the products you are buying. After you click the **Confirm Payment** button, you are redirected to the web page of the payment option you selected. This is where you submit your credit card data after which the payment is either approved or cancelled.

The payment options that are displayed on this page are stored in the *Webshop Business Settings* folder of your webshop.



For more information about configuring the Webshop Business Settings, see *SES Installation and Configuration Guide*.

1.2.1 Sitecore E-Commerce Payment Providers

Sitecore distributes the online payment providers as separate Sitecore packages. You can download these packages from the [SDN](#) and install them individually on your Sitecore E-Commerce Services installation.

The payment providers are not part of the Sitecore E-Commerce Services core package or of the *Sitecore E-Commerce Example Pages* package.

Important

The payment providers supplied with SES 2.2 allows customers to pay for their purchases through online payment services. SES 2.2 does not allow you to create your own payment forms.

There is a payment provider package for each of the following payment services:

Vendor	Data Transfer Type	Support – further information
PayPal	POST, Web Service	https://cms.paypal.com/us/cgi-bin/?cmd=_render-content&content ID=developer/library_documentation
Amazon: Flexible Payments Service.	GET Web Service	http://aws.amazon.com/fps/ https://payments.amazon.com/sdui/sdui/business?sn=devfps/fpso http://aws.amazon.com/fps/faqs/#a3
Authorize.NET: Server Integration Method, Advanced Integration Method.	POST, Web Service	http://developer.authorize.net/guides/AIM/ http://developer.authorize.net/guides/SIM/
BBS	Web Service	http://www.bbs.dk/ https://epayment-test.bbs.no/terminal/default.aspx https://epayment.bbs.no/terminal/default.aspx
DIBS	POST, Web Service	http://tech.dibs.dk/dibs-api/dibs-api/
ePay	POST, Web Service	http://www.epay.dk/main/
PayEx	Web Service, GET	http://www.payexpim.com (login: download, password: loaddown)
QuickPay	POST	http://doc.quickpay.dk/index.html

These payment providers only require a minimal amount of installation and configuration. The SES module has been tested with these payment providers.

SES supports the use of two or more payment providers at the same time.

You can use both the test and production accounts of the payment services by configuring the URL of the payment gateway in the configuration files or the payment items.

All the payment providers support:

- Money reservation and ticket booking.
- Ticket cancellation and payment capturing in the Order Catalog. You can also use the API for this.

1.3 Installing a Payment Provider

To install a payment provider package:

1. Download the appropriate package.
2. Upload the package to your Sitecore installation.
3. In the Sitecore Desktop, click **Sitecore, Development Tools, Installation Wizard**, and the **Install Package Wizard** will guide you through the installation process.

During the installation you must add the appropriate registration information to the `App_Config/Include/Unity.config` file.

For example, if you are installing ePay, you must make the following changes:

- Register the payment provider alias:

```
<alias
alias="EPayPaymentProvider"
type="Sitecore.Ecommerce.Payments.EPay.EPayPaymentProvider,
Sitecore.Ecommerce.Payments.EPay" />
```

- Register the payment provider in the container section of the `Unity.config` file:

```
<register type="PaymentProvider" mapTo="EPayPaymentProvider" name="EPay" />
```

- After that the payment provider is presented as the `master://sitecore/system/Modules/Ecommerce/Payment Options/<Provider>` item. Copy this item to the *Payment Options* folder in the content tree, where your webshop is located.

You must configure the payment providers for each individual webshop. Different webshops can offer different payment options to their customers.

PayPal

Register your solution and create a test account in the PayPal sandbox:

<https://developer.paypal.com/>

After you receive a username and password, enter this information in the PayPal form fields.

You can also use the sandbox to manage your test accounts. To manage a test account, choose the account you want and click *Enter test account*. You can also use the PayPal API to obtain the credentials that you need to perform a transaction.

Enter the following data in the *Settings* parameter:

```
<setting id="APIUsername">parten_1299487089_biz_apil.mail.ru</setting>
<setting id="APIPassword">SCT4S4W5Q4SPXB3H</setting>
<setting
id="APISignature">AzicKvQd037MzkHbKNXvi9pLpM5rAYjY72rYeECW2pBkSk1W4JwVYQEg</setting>
<setting id="Environment">sandbox</setting>
```

When you have finished testing, register a live account.

Amazon

To configure this payment provider, create a new Flexible Payments Service (FPS) account. For more information about how to configure the payment provider by creating a new FPS account, see <http://aws.amazon.com/fps/>

After you are registered, you receive the login credentials to use the service. In the *Amazon* item, enter the appropriate values in the *Username* and *Password* fields.

Authorize.Net

Create a test account on the following page:

<https://developer.authorize.net/testaccount>

Fill in the *Username* (merchant ID) and *Password* fields.

To manage your account and the transactions, use the following URL:

<https://test.authorize.net/>

BBS

Create a new test account on the following page.

<https://epayment-test.bbs.no/>

The BBS payment provider contains a configuration file.

You can switch to production by setting the following configuration URL:

```
<applicationSettings>
  <Sitecore.Ecommerce.Payments.Bbs.Properties.Settings>
    <setting name="Sitecore_Ecommerce_Payments_Bbs"
      serializeAs="String">
      <value>https://epayment.bbs.no/Netaxept.svc</value>
    </setting>
  </Sitecore.Ecommerce.Payments.Bbs.Properties.Settings>
</applicationSettings>
```

DIBS

Create a new test account and you receive a username, password, and two secret keys to verify your requests.

In the *Setting* field, enter *key1* and *key2* settings.

To manage your account, use the following URL:

<https://payment.architrade.com/login/login.action?pwc=1> (login as admin)

ePay

Contact the payment provider to obtain the username or merchant ID and password to use the service.

To manage your account, use the following URL:

<https://ssl.ditonlinebetalingssystem.dk/admin/>

PayEx

Create a new test account. Enter the username or merchant ID and password that you receive from the payment provider.

To manage your account, use the following URL:

<http://secure.payex.com/Admin/>

When you finished testing, you can make the payment provider use the live service endpoints within the configuration file:

```
<applicationSettings>
  <Sitecore.Ecommerce.Payments.PayEx.Properties.Settings>
    <setting name="Sitecore_Ecommerce_Payments_PayEx_PayExTest_PxOrder"
      serializeAs="String">
      <value>https://external.payex.com/pxorder/pxorder.asmx</value>
    </setting>
</applicationSettings>
```

```
</Sitecore.Ecommerce.Payments.PayEx.Properties.Settings>  
</applicationSettings>
```

QuickPay

Create a new test account. Enter the username or merchant ID and password that you receive from the payment provider.

To manage your account, use the following URL:

<https://manager.quickpay.net/>

Chapter 2

Integrating a Payment Provider

The Sitecore E-Commerce payment provider model uses invoice payment forms that are hosted by the payment services.

This chapter contains the following section:

- Hosted Payment Forms
- The Payment Provider API

2.1 Hosted Payment Forms

The payment services offer a hosted payment processing solution that handles all the steps in processing a transaction, including:

- Collecting customer payment information through a secure, hosted form.
- Generating a receipt for the customer.
- Secure transmission to the payment processing networks.
- Transfer of funds to the merchant's bank account.
- Secure storage of credit cardholder information.

The security of a payment transaction is assured through the use of a unique digital signature or fingerprint that is sent with each transaction. The payment providers use this fingerprint to authenticate both the merchant and the transaction.

Merchants are not required to collect, transmit, or store sensitive cardholder information to process transactions. Additionally, the hosted payment forms used by the payment services do not require merchants to purchase and install a Secure Sockets Layer (SSL) digital certificate.

This simplifies the process of securely handling and storing cardholder information, and makes it easier to comply with the Payment Card Industry (PCI) Data Security Standard.

In a typical webshop scenario, as demonstrated in the example pages, the workflow of the hosted payment forms used on the payment gateway is:

1. The customer adds some goods their shopping cart and goes to the checkout.
2. In the checkout process, on the *Payment* page, the customer selects a payment provider from the list of payment providers configured for the webshop (for example, Pay Pal or Amazon).
3. The customer's order data is transferred, using a secure protocol, to the payment service they selected and they are redirected to the payment gateway's hosted payment form pages.
4. On the payment gateway the customer enters their credentials, credit card number, and submits the form for processing.

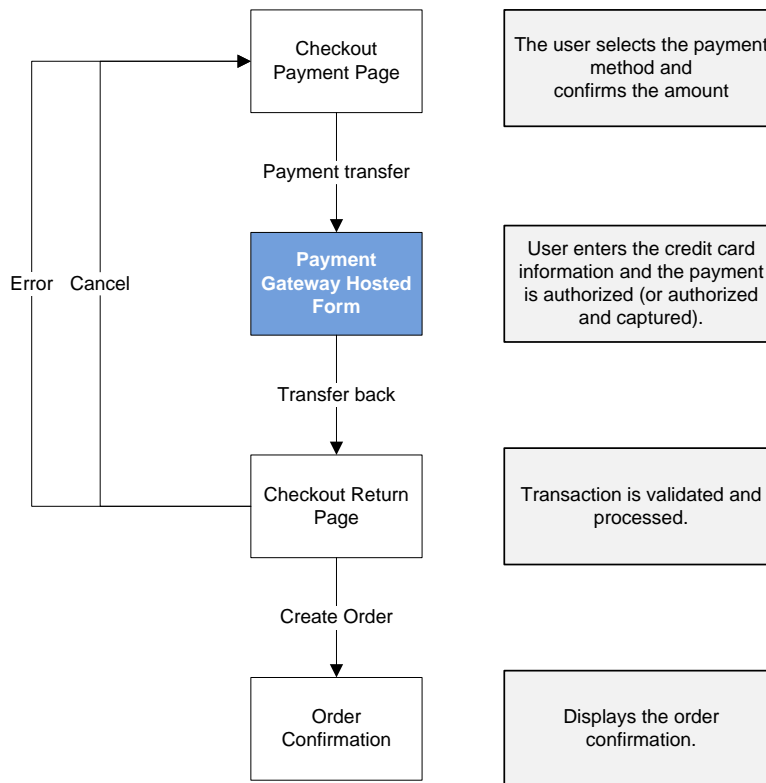
This is done externally from the web-shop. The Sitecore E-Commerce payment provider model supports several types of payments transactions:

- Authorize and capture.
 - Authorize only and capture or cancel at a later point.
5. The payment gateway transfers the customer back to the *Webshop Return* page of the checkout.

If there is an error, the example implementation displays a standard error message enabling the customer to try again or to select another payment method.

If the customer cancels the payment, the example implementation shows a cancel error message that lets the customer try again.

- If the transaction is completed successfully, the order is created and the order confirmation page is displayed.

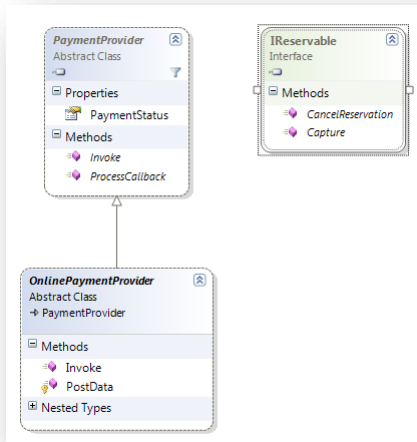


The SES supports different data transfer methods for the payment gateway integrations:

1. GET method: HTTP GET parameters transfer the data and initiate the payment.
2. Web service call: The payment gateway provides a web reference for activating remote methods and uses web service calls to transfer data
3. POST method: The payment provider provides a URL that accepts form fields with payment data and then transfers them with the HTTP POST method.

2.2 The Payment Provider API

The following classes and interfaces are at the top of the hierarchy:



All the specific payment providers like `EPayPaymentProvider`, `QuickPayPaymentProvider` are inherited from the `OnlinePaymentProvider` class and implement the `IReservable` interface.

The `OnlinePaymentProvider` class defines how online payments are processed. It supports both one-stage transactions, for example a sale, and two-stage transactions — authorization and subsequent capturing.

- The `Invoke (PaymentSystem paymentSystem, PaymentArgs paymentArgs)` method generates and transfers data to the payment provider for authorization or sale transaction.
- The `ProcessCallBack (PaymentSystem paymentSystem, PaymentArgs paymentArgs)` method processes the call from the payment gateway to validate payment for the transaction and create a reservation ticket, if necessary.

The `IReservable` interface processes online payments with separate authorization and capturing actions (postponed).

- The `Capture (PaymentSystem paymentSystem, PaymentArgs paymentArgs, ReservationTicket reservationTicket, decimal amount)` method generates and transfers data to the payment provider to capture the transaction and reserve the money.
- The `CancelReservation (PaymentSystem paymentSystem, PaymentArgs paymentArgs, ReservationTicket reservationTicket)` method cancels the ticket reservation.

Note

The default implementation of the `Capture` and `Cancel` order states contain business logic that calls the respective `Capture` and `Cancel` methods in the payment provider API. This means that when you use the order state buttons in the Content Editor to change the state of an order, the reserved payment is either captured or cancelled for the whole order. The payment provider API supports both partial and full capturing of money and the cancellation of reservations. However, partial handling of orders is not implemented in the current state logic and UI.

The SEFE core package also includes the following classes for storing and transmitting payment related information:

- `ReservationTicket` — contains information about the reserved payment.
- `AuthorizationCode` — a secure code. Each provider uses different logic to create and process the payment.
- `TransactionNumber` — the number of the authorization transaction.
- `InvoiceNumber` — the number of the order (invoice).
- `Amount` — the amount of money that is reserved.
- `PaymentArgs` — a unified list of the data that is required by the payment providers.
- `PaymentUrls`:
 - `SuccessPageUrl` — the URL of the local page that is called if the payment transaction is successful.
 - `FailurePageUrl` — the URL of the local page that is called if the payment transaction fails.
 - `CancelPageUrl` — the URL to the local page that is called if the customer cancels the payment transaction.
 - `ReturnPageUrl` — the URL of the default local return page.
- `Description` — a short explanation of the purchase. The webshop supplies this information.
- `Shopping cart` — contains all the information about the purchase, such as prices, VAT, goods, and so on. This information is supplied by the webshop.

Chapter 3

Payment Option Configuration

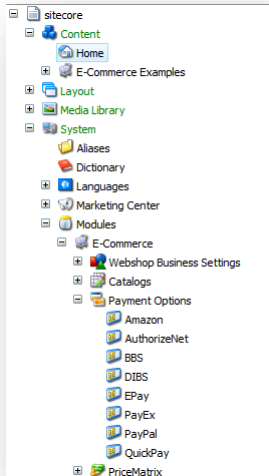
This chapter describes how to configure a payment option in Sitecore E-Commerce Services.

This chapter contains the following sections:

- Configuring a Payment Option
- Ticket Reservation
- Implementing a New Payment Provider

3.1 Configuring a Payment Option

When you install a payment provider package, an item is created in the `/sitecore/system/Modules/Ecommerce/Payment Options` folder.



To configure a payment provider and ensure that it appears on the *Checkout Payment* page of the example pages, you must copy the corresponding new payment option item from here and place it in the *Webshop Business Settings* folder for your webshop, for example, `E-Commerce Examples/Home/Webshop Business settings/Payment Options`.

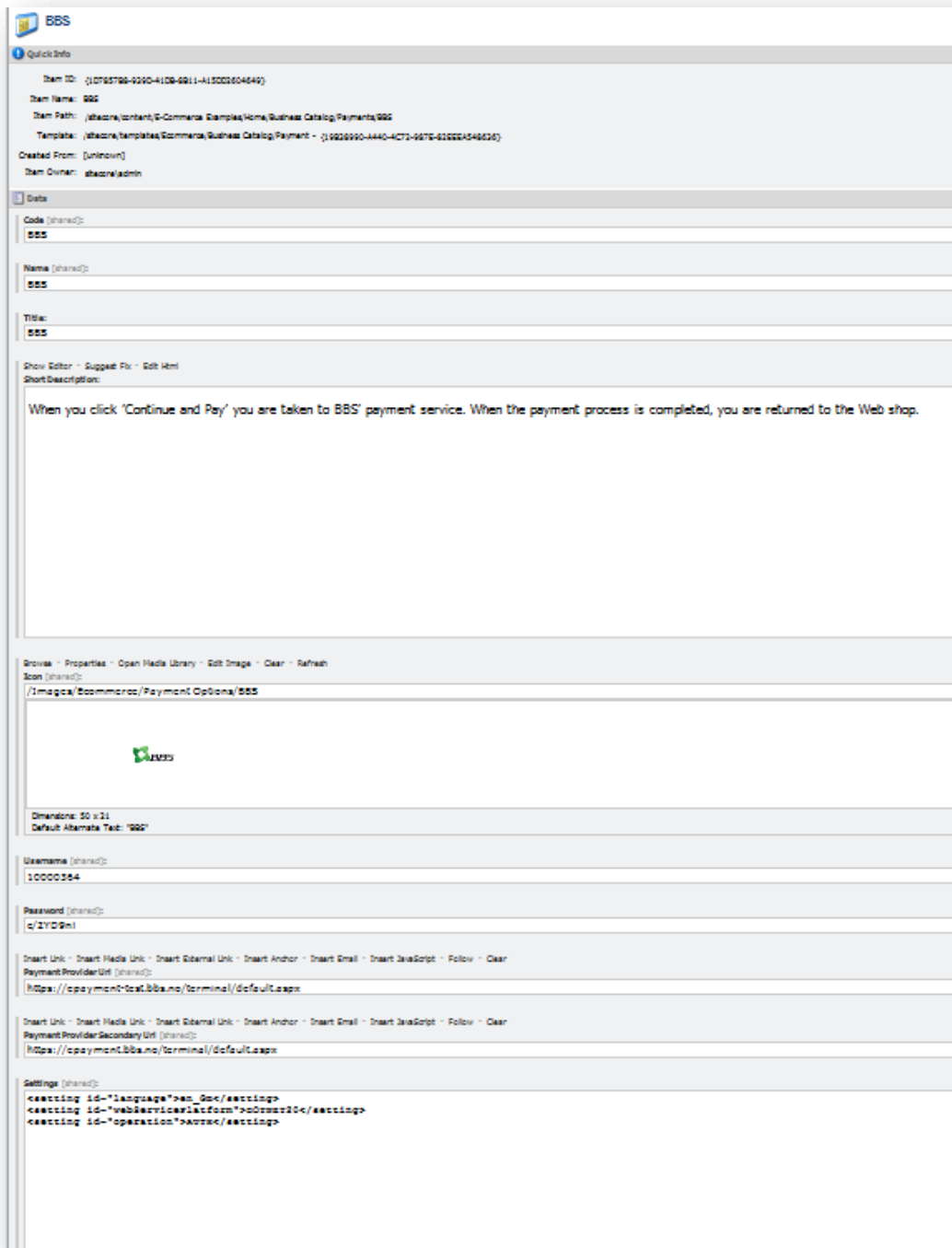
After you copy the payment option item to the *Webshop Business Settings* folder, you must fill in the following fields:

Field Name	Description
Title	The name displayed in the drop down list on the <i>Payment</i> page.
Short Description	The description of the payment option that is displayed on the <i>Payment</i> page.
Icon	The icon for the payment provider that is displayed on the <i>Payment</i> page.
Name	An optional field used by external systems when they import the item. Used to give an understandable description to the Code field.
Code	The unique identifier of the payment provider option. This is used throughout the system and is reflected on the order. This must be unique for all the payment option items in your business catalog.
Username	The name that identifies the merchant ID account for the online provider. This is obtained from the provider.

Field Name	Description
Password	The password/ token-id /security-key supplied by the payment provider. This is often used to encrypt data before sending it to the payment provider.
PaymentProviderUrl	The URL used to send data to the provider. This URL is generally different in the test and the production environments.
PaymentProviderSecondaryUrl	An optional field that is used if the payment integration needs to use different URLs for various parts of the integration. This can be used if the authentication payment form is located on one server and the web service calls point to another location.
Settings	<p>This field that enables the webshop owner to change the settings that are used to configure the behavior of the client. This data is either sent to the payment provider at the beginning of the payment transaction or can serve as directives for our engine. The values are entered as XML.</p> <p>The format of these settings are: <code><settings id="{settingName}">{some value}</settings></code></p>

You must copy the payment option items that you want to use from the `E-Commerce Examples/Home/Webshop Business settings/Payment Options` folder and place them in the `Webshop Business Settings` folder for each webshop installation that you want to run.

Here is an example of a payment option in SES.



The screenshot shows a configuration page for a payment option named "BBS". The page is divided into several sections:

- Quick Info:**
 - Item ID: {0765796-6290-4108-8911-415005604649}
 - Item Name: BBS
 - Item Path: /sitecore/content/E-Commerce/Examples/Home/Business Catalog/Payments/BBS
 - Template: /sitecore/templates/E-Commerce/Business Catalog/Payment - {0928990-4440-4C73-9976-616654546636}
 - Created From: [unknown]
 - Item Owner: sitecore\admin
- Data:**
 - Code (shared): BBS
 - Name (shared): BBS
 - Title: BBS
 - Show Editor: Suggested Fix: Edit HTML
 - Short Description: When you click "Continue and Pay" you are taken to BBS' payment service. When the payment process is completed, you are returned to the Web shop.
- Image:**
 - Icon (shared): /Image/E-commerce/Payment Options/BBS
 - Dimensions: 50 x 21
 - Default Alternate Text: BBS
- Username (shared):** 10000354
- Password (shared):** c/2YDQm1
- Payment Provider URI (shared):** <https://cpayment03cat.bbs.no/terminal/default.aspx>
- Payment Provider Secondary URI (shared):** <https://cpayment.bbs.no/terminal/default.aspx>
- Settings (shared):**

```
<setting id="language">en-us</setting>
<setting id="webServicesUrlFrom">https://cpayment03cat.bbs.no/terminal/default.aspx</setting>
<setting id="operation">accept</setting>
```

When you install a payment provider package, most of the fields in the payment option item are already filled in. However, you *must* edit the **User Name** (Merchant ID) and **Password** fields.

3.2 Ticket Reservation

The individual Sitecore E-Commerce Services payment provider packages can work with or without ticket reservation. The *IReservable* interface has been implemented for all these providers, and they are configured to work in *reservable* mode by default.

Reservable means that when a customer completes a payment and is redirected back to the *Return Page*, only authorization is performed. The money is not drawn from the customer's account before an explicit capture request to the payment provider is processed. The initial response from the payment provider contains the unique ticket information indicating that the order amount has been reserved. The reservation ticket is stored along with the order, and must be used to capture the money later.

To capture the money, additional actions must be performed.

You can capture the money by:

- Using the providers administration interface.
- Using the SES API.
- Managing the order.

Basic order management is implemented in SES 2.2. When you capture or cancel an order in any of the order states the business logic calls the payment provider and either uses the reservation ticket to capture the money or cancels the reservation ticket.

In SES, you can use the provider settings to configure each payment provider to work in *reservable* mode:

Amazon

- A) `<setting id="transactionType">AUTHORIZATION</setting>` - "reservable" mode.
- B) `<setting id="transactionType">SALE</setting>` - one-stage transaction mode.

Authorize.Net

- A) `<setting id="x_type">AUTH_ONLY</setting>` - "reservable" mode.
- B) `<setting id="transactionType">AUTH_CAPTURE</setting>` - one-stage transaction mode.

BBS

- A) `<setting id="operation">AUTH</setting>` - "reservable" mode.
- B) `<setting id="operation">SALE</setting>` - one-stage transaction mode.

DIBS

- A) `<setting id="preauth">>false</setting>`
`<setting id="capturenow">yes</setting>` - "reservable" mode.
- B) `<setting id="preauth">>true</setting>` - one-stage transaction mode.

ePay

- A) `<setting id="instantcapture">0</setting>` - "reservable" mode.
- B) `<setting id="instantcapture">1</setting>` - one-stage transaction mode.

PayEx

- A) `<setting id="purchaseOperation">AUTHORIZATION</setting>` - “reservable” mode.
- B) `<setting id="purchaseOperation">SALE</setting>` - one-stage transaction mode.

PayPal

- A) `<setting id="paymentaction">AUTHORIZATION</setting>` - “reservable” mode.
- B) `<setting id="paymentaction">SALE</setting>` - one-stage transaction mode.

QuickPay

- A) `<setting id="autocapture">0</setting>` - “reservable” mode.
- B) `<setting id="autocapture">1</setting>` - one-stage transaction mode.

3.3 Implementing a New Payment Provider

In a growing e-commerce market and with the emergence of new online payment services, Sitecore developers may need to implement new payment providers.

SES allows developers to implement a provider that adheres to the contracts.

To implement a custom SES payment provider:

1. Create a new .NET class library.
2. Add references to the `Microsoft.Practices.Unity`, `Sitecore.Ecommerce.DomainModel` and the `Sitecore.Ecommerce.Kernel` assemblies.
3. Create a new class and make it inherit from `Sitecore.Ecommerce.Payments.OnlinePaymentProvider`.
4. Make the class implement the `Sitecore.Ecommerce.DomainModel.Payments.IReservable` interface:

```
namespace <Any_Namespace>
{
    using Sitecore.Ecommerce.DomainModel.Payments;
    using Sitecore.Ecommerce.Payments

    /// <summary>
    /// PayPal online payment provider
    /// </summary>
    public class <SomeProvider>PaymentProvider : OnlinePaymentProvider, IReservable
    {
    }
}
```

5. Override the `Invoke(PaymentSystem, PaymentArgs)` method and the `ProcessCallback(PaymentSystem, PaymentArgs)` method.
6. Use the `Invoke` method to prepare the data that must be sent to the online payment provider and redirect to the service page. Some payment services accept the POST requests and others provide web methods to perform payment transactions.

In the following example, we use the PayPal provider as an example of how to implement a custom payment provider.

The PayPal implementation uses the POST method to communicate with the service:

```
public override void Invoke(PaymentSystem paymentSystem, PaymentArgs paymentArgs)
{
    // Fill the variables with the appropriate data.

    // You can find the necessary parameters in the online documentation
    // of the payment service.

    NameValueCollection requestData = new NameValueCollection
    {
        { "cmd", Command },
        { "paymentaction", paymentaction },
        { "business", merchant },
        { "item_name", description },
        { "item_number", ordernumber },
        { "amount", amount },
        { "currency_code", currency },
        { "return", returnUrl },
        { "cancel_return", cancelUrl },
        { "notify_url", returnUrl },
    }
```

```

    };

    this.PostData(paymentSystem.PaymentUrl, requestData);
}

```

7. The `ProcessCallback()` method must be called after redirection from the providers hosted form.

Check the incoming parameters in the request or use web methods to perform additional interaction.

Depending on the response, set the appropriate `PaymentStatus` for the Sitecore payment provider and handle it in the necessary way:

- Create the order and display the receipt.

or

- Redirect to the `PaymentCancel` page.

or

- Redirect to the `PaymentError` page.

Here is the example from the PayPal client:

```

public override void ProcessCallback(PaymentSystem paymentSystem, PaymentArgs
paymentArgs)
{
    this.PaymentStatus = PaymentStatus.Failure;

    HttpRequest request = HttpContext.Current.Request;
    string paymentStatus = request.Form["payment_status"].ToUpper();
    string transactionNumber = request.Form["txn_id"];
    string orderid = request.Form["item_number"];
    string currency = request.Form["mc_currency"];
    string amount = request.Form["mc_gross"];
    if (paymentStatus != "FAILED" && paymentStatus != "DENIED")
    {
        this.PaymentStatus = PaymentStatus.Succeeded;

        // Save the data after successful transaction, in HTTP Session by default
        if (/*Condition to check that your provider work in "reservable" mode*/)
        {
            ReservationTicket reservationTicket = new ReservationTicket
            {
                InvoiceNumber = orderid,
                Amount = TypeUtil.TryParse(amount, decimal.Zero),
                AuthorizationCode = PaymentConstants.EmptyAuthorizationCode,
                TransactionNumber = transactionNumber
            };
            /* Save the reservation ticket after successful transaction, in HTTP Session
            By default */
        }
    }
}
else
{
    this.PaymentStatus = PaymentStatus.Canceled;
}

if (this.PaymentStatus != PaymentStatus.Succeeded)
{
    /* Save the information that the transaction was cancelled or failed, in HTTP
    Session by default */
}
}

```

8. To make your payment provider work in reservable mode, you should also implement the following methods defined by the *IReservable* interface:

```
Capture(PaymentSystem, PaymentArgs, ReservationTicket, decimal amount),
Cancel(PaymentSystem, PaymentArgs, ReservationTicket).
```

The first method interacts with the payment service and captures the amount from the reserved ticket.

The second method cancels the reservation.

Note

The `Capture` method accepts a parameter called *Amount*, which enables partial capture. The original reserved amount is a part of the reservation ticket stored in SES. A full capture will withdraw the full authorized/reserved amount from the customer's account. Sometimes only a part of an order can be shipped initially or the order has been modified to contain less products. In these cases a partial capture withdraws only the specified amount and not the full amount. It's not possible to withdraw more money than has been originally authorized/reserved. If the amount in the order has changed and exceeds the original amount a new reservation must be performed.

Here is an example that uses the PayPal implementation:

```
/// <summary>
/// Captures the payment
/// </summary>
/// <param name="paymentSystem">The payment system.</param>
/// <param name="paymentArgs">The payment args.</param>
/// <param name="reservationTicket">The reservation ticket.</param>
/// <param name="amount">The amount.</param>
public void Capture(PaymentSystem paymentSystem, PaymentArgs paymentArgs, ReservationTicket
reservationTicket, decimal amount)
{
    var configuration = new PaymentSettingsReader(paymentSystem);
    var credentials = new CustomSecurityHeaderType
    {
        Credentials = new UserIdPasswordType
        {
            Username = configuration.GetSetting("APIUsername"),
            Password = configuration.GetSetting("APIPassword"),
            Signature = configuration.GetSetting("APISignature"),
        }
    };
    using (var client = new PayPalAPIAASoapBinding())
    {
        client.RequesterCredentials = credentials;
        DoCaptureReq request = new DoCaptureReq
        {
            DoCaptureRequest = new DoCaptureRequestType
            {
                AuthorizationID = reservationTicket.TransactionNumber,
                Amount = new BasicAmountType { currencyID = CurrencyCodeType.USD, Value =
amount.ToString() },
                Version = configuration.GetSetting("requestVersion")
            }
        };
        var response = client.DoCapture(request);
        string captureResult = response.Ack.ToString();

        ITransactionData transactionDataProvider =
Context.Entity.Resolve<ITransactionData>();
transactionDataProvider.SavePersistentValue(reservationTicket.InvoiceNumber,
captureResult == "Success" ? PaymentConstants.CaptureSuccess :
response.Errors.Aggregate("UnCaptured:", (current, error) => string.Format("{0}{1};",
current, error.ShortMessage)));
    }
}
```



```

/// <summary>
/// Cancels the payment reservation
/// </summary>
/// <param name="paymentSystem">The payment system.</param>
/// <param name="paymentArgs">The payment args.</param>
/// <param name="reservationTicket">The reservation ticket.</param>
public void CancelReservation(PaymentSystem paymentSystem, PaymentArgs paymentArgs,
ReservationTicket reservationTicket)
{
    var configuration = new PaymentSettingsReader(paymentSystem);
    var credentials = new CustomSecurityHeaderType
    {
        Credentials = new UserIdPasswordType
        {
            Username = configuration.GetSetting("APIUsername"),
            Password = configuration.GetSetting("APIPassword"),
            Signature = configuration.GetSetting("APISignature"),
        }
    };
    using (var client = new PayPalAPIAASoapBinding())
    {
        client.RequesterCredentials = credentials;
        DoVoidReq request = new DoVoidReq
        {
            DoVoidRequest = new DoVoidRequestType
            {
                AuthorizationID = reservationTicket.TransactionNumber,
                Version = configuration.GetSetting("requestVersion")
            }
        };
        var response = client.DoVoid(request);
        string cancelResult = response.Ack.ToString();

        ITransactionData transactionDataProvider = Context.Entity.Resolve<ITransactionData>();
        transactionDataProvider.SavePersistentValue(reservationTicket.InvoiceNumber, cancelResult
        == "Success" ? PaymentConstants.CancelSuccess : response.Errors.Aggregate("UnCanceled:",
        (current, error) => string.Format("{0}{1};", current, error.ShortMessage)));
    }
}

```

9. Compile your assembly and place it in the /bin folder of your web site.
10. Register your provider in the <root>/App_Config/Unity.config file:
 - o Set the payment provider:

```

<alias alias="<PROVIDER_NAME>" type="<YOUR_NAMESPACE>.<PROVIDER_CLASS_NAME>,
<ASSEMBLY_NAME" />;

```

- o Set the payment provider in the <container /> section:

```

<register type="PaymentProvider" mapTo="<PROVIDER_NAME>"
name="<CUSTOM_SHORT_NAME>" />

```

11. Create a new payment provider item in the *Payment Options* item of the *Business Catalog* from the master://sitecore/templates/Ecommerce/Business Catalog/Payment template.
12. Fill in the necessary fields. The value of the *Code* field should be equal to:
13. <CUSTOM_SHORT_NAME>
14. Register the account on the service side and obtain the credentials.
15. Enter the URL, Merchant ID, and Password in the appropriate fields. Publish the item.