

VERIFONE E-COMMERCE

Integration Guide

Hosted Pages

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1 Introduction

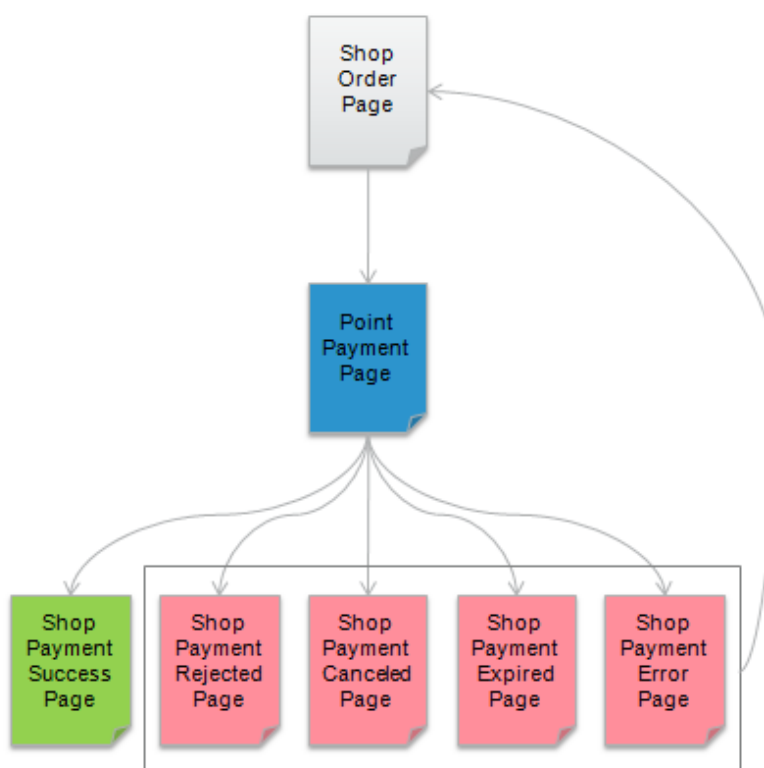
This document describes integration process and browser interface between a web shop (later a shop system) and Verifone E-Commerce System (later the payment system). The interface is designed to operate over HTTPS where primary communication channel between a shop system and the payment system is via web browser of an end customer (later buyer). Authentication of both systems and verification of message integrity is implemented using digital signatures.

2 Interface Description

This chapter describes technically the payment interface to enable third party integrations of shop systems to the payment system.

2.1 Process

The payment process starts at Shop Order Page (later order page) where order is summarized and button for moving to Verifone Payment Page (later payment page) is present. Pushing the payment button posts the Verifone Payment Initialization Form (later initialization form) to the payment page. The payment process ends with posting of Verifone Payment Success Result Form (later success form) to the Shop Success Page (later success page) or posting of Payment Cancel Result Form (later cancel form) to one of the four cancel pages as illustrated below. It should be possible for the user to move with a single click from the cancel page to the order page to retry payment. Alternatively, the order page can implement functionality in all the four cancel pages, in which case the order page should be able to process the cancel result form post and the order page URL should be given to all four cancel page URLs.



2.1.1 Payment Cancellation Scenarios

Payment process has four main cancel scenarios as listed below:

Name	Message	Description
Rejected	cancel-payment-rejected	Payment was rejected by payment acquirer due to restrictions placed on payment method or lack of funds in the corresponding account.
Buyer Canceled	cancel-user-canceled	Buyer canceled to payment process.
Expired	cancel-payment-expired	The payment process expired due to timeout or usage of browser navigation buttons.
Error	cancel-system-error	The payment process failed due to error in the payment system or payment acquirer system.
Error	cancel-inv-payment-params	The payment process failed due to incorrect payment parameters from merchant that lead to situation that could not be fulfilled, such as an attempt to make recurring bank payment. (Recurring payments are supported by payment cards only). Failure to enter required parameters or their meet basic validity, such as lengths does not lead to this situation, but to a blank page.
Error	cancel-external-system-error	The payment failed due to external system giving invalid message authentication code.
Rejected	cancel-save-rej-not-enrolled	Attempt to save a non 3d secure enrolled card, when this is not supported by acquirer agreement for this type of card.
Buyer Canceled	cancel-paym-rej-not-enrolled	Attempt to pay with non 3d secure enrolled card more than the maximum set by acquirer agreement of the merchant for that card type. (Example: Customer is trying to buy 30 EUR payment with business visa, that does not support 3ds and the merchant has 20 EUR limit for non-enrolled card in VISA acquirer agreement.)
Rejected	cancel-ext-address-mismatch	External system has different address than given one.
Buyer Canceled	cancel-too-many-sms-passwords	User tried to enter wrong SMS password too many times.
Buyer Canceled	cancel-too-many-input-retries	Page has been reloaded for too many times. Browsers have been instructed not to reload payment web pages, so if this happens payment web will assume that the request is not from the browser or browser is reloading page infinitely.
Rejected	cancel-bank_axess_error	Payment rejected because of a BankAxess error code returned. (Example: J1: Bank does not support BankAxess).

The message value is passed in cancel result posts (using parameter s-t-1-30_cancel-reason).

2.2 Transport

Transport between shop system and payment system is carried out via web browser of the buyer and secured using transport layer security (HTTPS) in both connections: browser to shop system and browser to payment system. Only server side certificate granted by public certificate authorities are used in transport layer security. Messages are encoded as HTML forms with UTF-8 character set as part of the page buyer views and transmitted with HTTP POST requests.

2.3 Security

Digital signatures are used to authenticate participating systems and to verify message integrity. Messages are signed with two different alternative algorithms to allow for wide variety of technical platforms to be supported. The public key size is 1024.

2.3.1 Calculating Digital Signature from Form Parameters

Form parameter name value pairs are sorted by key according the following collation: "0123456789-_abcdefghijklmnopqrstuvwxyz". The signed content is created from this value list according to the following format:

2.3.1.1 Format of the Signed Parameter Content

Note: If ';' occurs in value it will be replaced with ';;' in signature content string. This applies to both requests and responses.

```
<key1>=<value1>;<key2>=<value2>;...<keyN=valueN>;
```

Example of the Signed Parameter Content

```
i-f-1-3_order-currency-code=978;...;
```

2.3.2 Digital Signature Types

Current supported types are as follows:

Signature Number	Algorithm
1	RSA with SHA-1
2	RSA with SHA-512

There are two separate parameters in all POSTs for the above signature types.

2.3.3 Example POST with signature

```
i-f-1-11_interface-version=3&i-f-1-3_order-currency-code=978&i-t-1-11_bi-unit-count=0=1
&i-t-1-1_deferred-payment=0&i-t-1-1_recurring-payment=0&i-t-1-1_save-payment-method=0
&i-t-1-1_skip-confirmation-page=0&i-t-1-3_delivery-address-country-code=246
&i-t-1-4_bi-discount-percentage=0=0&i-t-1-4_bi-vat-percentage=0=2300
&i-t-1-4_order-vat-percentage=2300&l-f-1-20_order-gross-amount=1230
&l-f-1-20_order-net-amount=1000&l-f-1-20_order-vat-amount=230
&l-t-1-20_bi-gross-amount=0=1230&l-t-1-20_bi-net-amount=0=1000
&l-t-1-20_bi-unit-cost=0=1000&l-t-1-20_saved-payment-method-id=&locale-f-2-5_payment-locale=fi_FI
&s-f-1-100_buyer-email-address=matti.meikalainen%40verifone.fi&s-f-1-10_software-version=1.0.1
&s-f-1-30_buyer-first-name=John&s-f-1-30_buyer-last-name=Smith
&s-f-1-30_software=My+Web+Shop&s-f-1-36_merchant-agreement-code=line-test-merchant-agreement-code
&s-f-1-36_order-number=1336741353584&s-f-32-32_payment-token=4952A81A2BD143AA3FDDF6D8BB5EF432
&s-f-5-128_cancel-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_error-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_expired-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_rejected-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Fcancel
&s-f-5-128_success-url=https%3A%2F%2Fdev-test-ecom%2Ftest-shop%2Freceipt
&s-t-1-30_bi-name=0=test-basket-item-0&s-t-1-30_buyer-phone-number=%2B358+40+163+9099
&s-t-1-30_delivery-address-city=City&s-t-1-30_delivery-address-line-one=Street+Address+%231
&s-t-1-30_delivery-address-line-three=Street+Address+%233
&s-t-1-30_delivery-address-line-two=Street+Address+%232
&s-t-1-30_delivery-address-postal-code=00234&s-t-1-30_payment-method-code=
&s-t-1-30_style-code=&s-t-1-36_order-note=x213
&s-t-256-256_signature-one=13AE7CC1B32F385A487354FDD83E9EDAEF122A730766EF38CC3A0E64
F72B0D40E16E40C1072CD221F55A70E5594692C06B6A1BCAC0A48CE57E869D67585BFE206DADE823CD7FA03C3B6BD13B9
D42AEC8386521890526EB476FE42F4591F52388775CE013120F4D2556CA0956C820241C03BAB5097CC336861182D5ED72
DA09DE
&t-f-14-19_order-timestamp=2012-05-11+13%3A02%3A33
&t-f-14-19_payment-timestamp=2012-05-21+13%3A04%3A26
```

2.4 Reliability

2.4.1 Selecting Working Payment Node

For each payment the shop system will execute availability check to the payment page of payment cluster nodes in round robin manner to select a working node to communicate with.

2.4.2 Ensuring Transmission of Payment Result

The payment interface has two different feedback channels to signal payment result. First channel is the consumer returning with browser to web shop thus making a result form post. Second channel is redundant programmatic posting of result form directly from the payment system to the shop system. This is done to guarantee sending of result form in case of premature closing of browser of the buyer. The redundant post is sent to static delayed result URL defined by merchant web shop.

2.5 Page URLs

Name	Description	Posted Form
Verifone E-Commerce Payment Node #1 Availability	The URL to payment node #1 availability check page.	
Verifone E-Commerce Payment Node #2 Availability	The URL to payment node #2 availability check page.	
Verifone E-Commerce Payment Node #3 Availability	The URL to payment node #3 availability check page.	
Verifone E-Commerce Payment Node #1 Payment Page	The URL to payment node #1 payment page.	Payment Initiation Form
Verifone E-Commerce Payment Node #2 Payment Page	The URL to payment node #2 payment page.	Payment Initiation Form
Verifone E-Commerce Payment Node #3 Payment Page	The URL to payment node #3 payment page.	Payment Initiation Form
Web Shop Payment Success Page	The URL to payment success page of the web shop.	Payment Success Result Form
Web Shop Payment Rejected Page	The URL to payment rejected page of the web shop.	Payment Cancel Result Form
Web Shop Payment Canceled Page	The URL to payment canceled page of the web shop.	Payment Cancel Result Form
Web Shop Payment Expired Page	The URL to payment expired page of the web shop.	Payment Cancel Result Form
Web Shop Payment Error Page	The URL to payment error page of the web shop.	Payment Cancel Result Form

2.6 Messages

2.6.1 Availability Get

HTTP GET directed to one of the payment page URLs will result HTTP 200 (OK) and empty response content if the node is available. Any HTTP error code or other content in the response or no response at all (timeout) indicates that the payment system node is not available.

2.6.2 Payment Initialization Post

Optional fields without values should to be omitted entirely from the HTTP POSTs.

2.6.2.1 Payment Initialization Form Parameters

Title	Parameter Name	Format	Version	Optional
Payment Token	s-f-32-32_payment-token	String with 32 characters.	3	No
Locale	locale-f-2-5_payment-locale	String with length of 2-5 characters.	3	No
Payment Timestamp	t-f-14-19_payment-timestamp	yyyy-MM-dd HH:mm:ss	3	No
Merchant Agreement Code	s-f-1-36_merchant-agreement-code	String with length of 1-36 characters.	3	No
Order Number	s-f-1-36_order-number	String with length of 1-36 characters.	3	No
Order Timestamp	t-f-14-19_order-timestamp	yyyy-MM-dd HH:mm:ss	3	No
Order Note	s-t-1-36_order-note	String with length of 0 or 1-36 characters.	3	Yes
Order Currency Code	i-f-1-3_order-currency-code	String with length of 1-3 numeric characters.	3	No
Order Gross Amount	l-f-1-20_order-gross-amount	Long integer value formatted as string with 1-20 numeric characters.	3	No
Order Net Amount	l-f-1-20_order-net-amount	Long integer value formatted as string with 1-20 numeric characters.	3	No
Order VAT Amount	l-f-1-20_order-vat-amount	Long integer value formatted as string with 1-20 numeric characters.	3	No
Order VAT Percentage	i-t-1-4_order-vat-percentage	Integer formatted as string with 0, 1-4 numeric characters	3	Yes
Buyer First Name	s-f-1-30_buyer-first-name	String with length of 1-30 characters.	3	No
Buyer Last Name	s-f-1-30_buyer-last-name	String with length of 1-30 characters.	3	No
Buyer Phone Number	s-t-1-30_buyer-phone-number	String with length of 0, 1-30 characters.	3	Yes
Buyer Email Address	s-f-1-100_buyer-email-address	String with length of 1-100 characters.	3	No
Buyer External Identifier	s-t-1-255_buyer-external-id	String with length of 1-255 characters.	3	Yes
Delivery Address Line #1	s-t-1-30_delivery-address-line-one	String with length of 0, 1-30 characters.	3	Yes
Delivery Address Line #2	s-t-1-30_delivery-address-line-two	String with length of 0, 1-30 characters.	3	Yes
Delivery Address Line #3	s-t-1-30_delivery-address-line-three	String with length of 0, 1-30 characters.	3	Yes
Delivery Address City	s-t-1-30_delivery-address-cityress-city	String with length of 0, 1-30 characters.	3	Yes
Delivery Address Postal Code	s-t-1-30_delivery-address-postal-code	String with length of 0, 1-30 characters.	3	Yes
Delivery Address Country Code	i-t-1-3_delivery-address-country-code	String with length of 0, 1-3 characters.	3	Yes
Payment Method Code	s-t-1-30_payment-method-code	String with length of 1-30 characters.	3	Yes
Payment Method ID	l-t-1-20_saved-payment-method-id	Long integer value formatted as string with 1-20 numeric characters.	3	Yes
Style Code	s-t-1-30_style-code	String with length of 1-30 characters.	3	Yes
Deferred Payment	i-t-1-1_deferred-payment	Integer with value 0 or 1.	3	Yes
Web Terminal Payment	i-t-1-1_web-terminal-payment	Integer with value 0 or 1	3	Yes
Recurring Payment	i-t-1-1_recurring-payment	Integer with value 0 or 1.	3	Yes
Recurring Payment Subscription Name	s-t-1-30_recurring-payment-subscription-name	String with length 1-30 characters.	3	Yes
Recurring Payment Subscription Code	s-t-1-30_recurring-payment-subscription-code	String with length 1-30 characters.	3	Yes

Recurring Payment Subscription Expected Period	i-t-1-3_recurring-payment-subscription-expected-period	Integer with value of 7-999	3	Yes
Recurring Payment Subscription End	t-t-14-19_recurring-payment-subscription-end	yyyy-MM-dd HH:mm:ss	3	Yes
Save Payment Method	i-t-1-1_save-payment-method	Integer with value 0 or 1 or 2 or 3.	3	Yes
Register Token	i-t-1-1_register-token	Integer with value 0 or 1	3	Yes
Token Extra Info	i-t-1-1_token-extra-info	Integer with value 0 or 1	5	Yes
Token Scope	i-t-1-1_token-scope	Integer with value 1,2,3	5	Yes
Service Code	s-t-1-36_service-code	String of max 36 chars	5	Yes
Skip Confirmation Page	i-t-1-1_skip-confirmation-page	Integer with value 0 or 1.	3	Yes
Success URL	s-f-5-128_success-url	String with length of 5-128 characters.	3	No
Rejected URL	s-f-5-128_rejected-url	String with length of 5-128 characters.	3	No
Cancel URL	s-f-5-128_cancel-url	String with length of 5-128 characters.	3	No
Expired URL	s-f-5-128_expired-url	String with length of 5-128 characters.	3	No
Error URL	s-f-5-128_error-url	String with length of 5-128 characters.	3	No
Success URL	s-f-5-256_success-url	String with length of 5-256 characters.	5	No
Rejected URL	s-f-5-256_rejected-url	String with length of 5-256 characters.	5	No
Cancel URL	s-f-5-256_cancel-url	String with length of 5-256 characters.	5	No
Expired URL	s-f-5-256_expired-url	String with length of 5-256 characters.	5	No
Error URL	s-f-5-256_error-url	String with length of 5-256 characters.	5	No
Change Delayed Success URL	s-t-5-256_change-server-to-server-success-url	String with length of 5-256 characters	5	Yes
Type of payment	s-t-1-32_type-of-payment	String with length of 1-32	5	Yes
Software	s-f-1-30_software	String with length of 1-30 characters.	3	No
Software Version	s-f-1-10_software-version	String with length of 1-10 characters.	3	No
Interface Version	i-f-1-11_interface-version	String with length of 1-11 numeric characters.	3	No
Submit Button	s-t-1-40_submit	String with length of 1-40 characters.	3	Yes
Signature One	s-t-256-256_signature-one	String with length of 256 characters.	3	Yes
Signature Two	s-t-256-256_signature-two	String with length of 256 characters.	3	Yes
Skip 3D Secure	i-t-1-1_skip-three-d-secure	Integer with value 0 or 1.	5	Yes
Delivery Address First Name	s-t-1-30_delivery-address-first-name	String with length of 1-30 characters	5	Yes
Delivery Address Last Name	s-t-1-30_delivery-address-last-name	String with length of 1-30 characters	5	Yes
Delivery Address State	s-t-1-30_delivery-address-state	String with length of 1-30 characters	5	Yes
Delivery Address Phone Number	s-t-1-30_delivery-address-phone-number	String with length of 1-30 characters	5	Yes
Delivery Address Email	s-t-1-100_delivery-address-email	String with length of 1-100 characters	5	Yes
Dynamic feedback	s-t-1-1024_dynamic-feedback	String with length of 1-1024	5	Yes
Social Security Number	s-t-0-11_social-security-number	String with length 0-11	3	Yes

2.6.2.2 Payment Initialization Form Shopping Basket Extension Parameters

1-50 basket items (indexes 0-49) are supported and they viewed to user as reminder of what the order contains.

Even though these parameters are not mandatory as set, if they are filled, then they have to be filled for all items included in the delivery. Basket items have to be filled with index numbers starting from 0 and have no gaps it between them.

Shopping basket is mandatory for all Invoice payment methods.

If you have one parameter set for an item you must have all the other parameters set for that item as well, except only one of **Item Unit Cost** and **Item Unit Gross Cost** must be filled. Both must not be filled.

Example:

If you have item 3, you must fill all fields of item 3, except you have to fill in only **I-t-1-20_bi-unit-cost-3** OR **I-t-1-20_bi-unit-gross-cost-3**, but not both.

Title	Parameter Name	Format	Optional
Item Name	s-t-1-30_bi-name-<N>	String with length of 1-30 characters.	Yes
Item Unit Cost	I-t-1-20_bi-unit-cost-<N>	Long integer value formatted as string with 1-20 numeric characters. Must be filled if unit gross cost is not filled. Must not be filled if it is.	Yes
Item Unit Gross Cost	I-t-1-20_bi-unit-gross-cost-<N>	Long integer value formatted as string with 1-20 numeric characters. Must be filled if unit cost is not filled. Must not be filled if it is.	Yes
Item Unit Count	i-t-1-11_bi-unit-count-<N>	Integer value formatted as string with 1-11 numeric characters.	Yes
Item Gross Amount	I-t-1-20_bi-gross-amount-<N>	Long integer value formatted as string with 1-20 numeric characters.	Yes
Item Net Amount	I-t-1-20_bi-net-amount-<N>	Long integer value formatted as string with 1-20 numeric characters.	Yes
Item VAT Percentage	i-t-1-4_bi-vat-percentage-<N>	Integer formatted as string with 0, 1-4 numeric characters	Yes
Item Discount Percentage	i-t-1-4_bi-discount-percentage-<N>	Integer formatted as string with 0, 1-4 numeric characters	Yes

2.6.2.3 Channel payment

On top of the basket item parameters, channel payments are enabled by filling below parameters. All of them must have values to enable channel payments or NULL to disable channel payments. If channel payment is used, merchant agreement needs to be set to allow this type of payment and sub-merchants need to exist.

Note: Channel payments feature is only for special cases and use of it must be agreed with Verifone in advance. These parameters must not be used otherwise.

Title	Parameter Name	Format	Optional
Item Merchant Code	s-t-1-36_bi-merchant-agreement-code-<N>	String with length of 1-36 characters.	Yes, (if all are set to NULL). Otherwise, No.
Item Product Number	s-t-1-36_bi-product-number-<N>	String with length of 1-36 characters.	Yes, (if all are set to NULL). Otherwise, No.
Item Commission percentage	i-t-1-4_bi-commission-percentage-<N>	Integer formatted as string with 0, 1-4 numeric characters.	Yes, (if all are set to NULL). Otherwise, No.
Item channel fee	I-t-1-20_bi-fee-amount-<N>	Long formatted as string with 0,1-20 numeric characters	Yes, (if all are set to NULL). Otherwise, No.

2.6.2.4 Anonymous payment

Any merchant wishing to use anonymous payment must communicate to Verifone before doing so. There is however no technical blocker in Verifone's service, so any merchant is technically able to use it (as merchant is able to fill in bogus names.)

It is possible to issue anonymous payment by setting first name and last name to '?'. Both have to be filled with '?'. Email may be set to '?', but can be set, in which case it is saved by the system. External id may not be given. Anonymous payments must not be recurring.

2.6.2.5 Mandatory Transaction Information

The merchant needs to provide the following minimum mandatory information:

Mandatory Transaction Information	Description
l-f-1-20_order-gross-amount	1. If save-payment-method equals to 2, then the amount value could equal or be greater than 0 2. If save-payment-method does not exist OR its value doesn't equal to 2, then the amount value could only be greater than 0
l-f-1-20_order-net-amount	mandatory
l-f-1-20_order-vat-amount	mandatory
i-f-1-3_order-currency-code	mandatory
s-f-1-36_order-number	mandatory
s-f-1-100_buyer-email-address	mandatory
s-f-1-30_buyer-first-name	mandatory
s-f-1-30_buyer-last-name	mandatory
t-f-14-19_order-timestamp	mandatory
s-f-1-36_merchant-agreement-code	mandatory
s-t-1-30_buyer-phone-number s-t-1-255_buyer-external-id	1. IF save-payment-method equals to 2, either buyer-phone-number or buyer-external-id are mandatory. Both can also be used. 2. optional with save-payment-method values other than 2.

Initialization Form Example

```
<form id="integration-form" action="#" method="post">
<table>
<tbody><tr><td>i-f-1-11_interface-version</td><td><input type="text" name="i-f-1-11_interface-version"
value="2"></td></tr>
<tr><td>i-f-1-3_order-currency-code</td><td><input type="text" name="i-f-1-3_order-currency-code"
value="978"></td></tr>
<tr><td>i-t-1-11_bi-unit-count-0</td><td><input type="text" name="i-t-1-11_bi-unit-count-0"
value="1"></td></tr>
<tr><td>i-t-1-1_deferred-payment</td><td><input type="text" name="i-t-1-1_deferred-payment"
value="0"></td></tr>
<tr><td>i-t-1-1_recurring-payment</td><td><input type="text" name="i-t-1-1_recurring-payment"
value="0"></td></tr>
<tr><td>i-t-1-3_delivery-address-country-code</td><td><input type="text" name="i-t-1-3_delivery-
address-country-code" value="246"></td></tr>
<tr><td>i-t-1-4_bi-discount-percentage-0</td><td><input type="text" name="i-t-1-4_bi-discount-
percentage-0" value="0"></td></tr>
<tr><td>i-t-1-4_bi-vat-percentage-0</td><td><input type="text" name="i-t-1-4_bi-vat-percentage-0"
value="2300"></td></tr>
<tr><td>i-t-1-4_order-vat-percentage</td><td><input type="text" name="i-t-1-4_order-vat-percentage"
value="2300"></td></tr>
<tr><td>l-f-1-20_order-gross-amount</td><td><input type="text" name="l-f-1-20_order-gross-amount"
value="1230"></td></tr>
<tr><td>l-f-1-20_order-net-amount</td><td><input type="text" name="l-f-1-20_order-net-amount"
value="1000"></td></tr>
<tr><td>l-f-1-20_order-vat-amount</td><td><input type="text" name="l-f-1-20_order-vat-amount"
value="230"></td></tr>
<tr><td>l-t-1-20_bi-gross-amount-0</td><td><input type="text" name="l-t-1-20_bi-gross-amount-0"
value="100"></td></tr>
<tr><td>l-t-1-20_bi-net-amount-0</td><td><input type="text" name="l-t-1-20_bi-net-amount-0"
value="100"></td></tr>
<tr><td>l-t-1-20_bi-unit-cost-0</td><td><input type="text" name="l-t-1-20_bi-unit-cost-0"
value="100"></td></tr>
<tr><td>locale-f-2-5_payment-locale</td><td><input type="text" name="locale-f-2-5_payment-locale"
value="fi_FI"></td></tr>
<tr><td>s-f-1-10_software-version</td><td><input type="text" name="s-f-1-10_software-version"
value="1.0.1"></td></tr>
<tr><td>s-f-1-100_buyer-email-address</td><td><input type="text" name="s-f-1-100_buyer-email-address"
value="matti.meikalainen@verifone.fi"></td></tr>
<tr><td>s-f-1-30_buyer-first-name</td><td><input type="text" name="s-f-1-30_buyer-first-name"
value="John"></td></tr>
<tr><td>s-f-1-30_buyer-last-name</td><td><input type="text" name="s-f-1-30_buyer-last-name"
value="Smith"></td></tr>
<tr><td>s-f-1-30_software</td><td><input type="text" name="s-f-1-30_software" value="My Web
```

```

Shop"></td></tr>
<tr><td>s-f-1-36_merchant-agreement-code</td><td><input type="text" name="s-f-1-36_merchant-agreement-
code" value="line-test-merchant-agreement-code"></td></tr>
<tr><td>s-f-1-36_order-number</td><td><input type="text" name="s-f-1-36_order-number"
value="1325141018121"></td></tr>
<tr><td>s-f-5-128_cancel-url</td><td><input type="text" name="s-f-5-128_cancel-url"
value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_error-url</td><td><input type="text" name="s-f-5-128_error-url"
value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_expired-url</td><td><input type="text" name="s-f-5-128_expired-url"
value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_rejected-url</td><td><input type="text" name="s-f-5-128_rejected-url"
value="http://127.0.0.1:8081/test-shop/cancel"></td></tr>
<tr><td>s-f-5-128_success-url</td><td><input type="text" name="s-f-5-128_success-url"
value="http://127.0.0.1:8081/test-shop/receipt"></td></tr>
<tr><td>s-t-1-30_payment-method-code</td><td><input type="text" name="s-t-1-30_payment-method-code"
value=""></td></tr>
<tr><td>s-t-1-30_style-code</td><td><input type="text" name="s-t-1-30_style-code" value=""></td></tr>
<tr><td>s-t-1-30_bi-name-0</td><td><input type="text" name="s-t-1-30_bi-name-0" value="test-basket-
item-0"></td></tr>
<tr><td>s-t-1-30_buyer-phone-number</td><td><input type="text" name="s-t-1-30_buyer-phone-number"
value="+358 40 163 9099"></td></tr>
<tr><td>s-t-1-30_delivery-address-city</td><td><input type="text" name="s-t-1-30_delivery-address-city"
value="City"></td></tr>
<tr><td>s-t-1-30_delivery-address-line-one</td><td><input type="text" name="s-t-1-30_delivery-address-
line-one" value="Street Address #1"></td></tr>
<tr><td>s-t-1-30_delivery-address-line-three</td><td><input type="text" name="s-t-1-30_delivery-
address-line-three" value="Street Address #3"></td></tr>
<tr><td>s-t-1-30_delivery-address-line-two</td><td><input type="text" name="s-t-1-30_delivery-address-
line-two" value="Street Address #2"></td></tr>
<tr><td>s-t-1-30_delivery-address-postal-code</td><td><input type="text" name="s-t-1-30_delivery-
address-postal-code" value="00234"></td></tr>
<tr><td>s-t-1-36_order-note</td><td><input type="text" name="s-t-1-36_order-note"
value="x213"></td></tr>
<tr><td>state</td><td><input type="text" name="state" value="sign-and-forward"></td></tr>
<tr><td>t-f-14-19_order-timestamp</td><td><input type="text" name="t-f-14-19_order-timestamp"
value="2011-12-29_06:43:38"></td></tr>
<tr><td>t-f-14-19_payment-timestamp</td><td><input type="text" name="t-f-14-19_payment-timestamp"
value="2011-12-29_06:43:38"></td></tr>
</tbody></table>
</form>

```

2.6.2.6 Initialization Post Response

On success payment system will respond with HTTP status 200 OK. Any other response code indicates availability problem in the payment system node.

2.6.3 Payment Success Result Post

2.6.3.1 Payment Success Result Form Parameters

Title	Parameter Name	Format	Version
Transaction Number	l-f-1-20_transaction-number	Integer value formatted as string with 1-20 numeric characters.	3
Payment Method Code	s-f-1-30_payment-method-code	String with length of 1-30 characters.	3
Order Number	s-f-1-36_order-number	String with length of 1-36 characters.	3
Order Note	s-t-1-36_order-note	String with length of 0 or 1-36 characters.	3
Order Timestamp	t-f-14-19_order-timestamp	yyyy-MM-dd HH:mm:ss	3
Order Currency Code	i-f-1-3_order-currency-code	String with length of 1-3 numeric characters.	3
Order Gross Amount	l-f-1-20_order-gross-amount	Long integer value formatted as string with 1-20 numeric characters.	3
Software Version	s-f-1-10_software-version	String with length of 1-10 characters.	3
Interface Version	i-f-1-11_interface-version	String with length of 1-11 numeric characters.	3
Reference Number	s-f-1-20_reference-number	String with length of 1-20 characters.	4
Signature One	s-t-256-256_signature-one	String with length of 256-512 characters.	3
Signature Two	s-t-256-256_signature-two	String with length of 256-512 characters.	3
Token	s-t-1-256_token	String with length of 0 or 1-256 characters.	3
Filing Code	s-t-1-26_filing-code	String with length of 0 or 1-26 characters.	3
Social Security Number	s-t-0-11_social-security-number	String with length of 0 to 11 characters.	3
Buyer Email address	s-f-1-100_buyer-email-address	String with length of 1 to 100 characters.	3
Buyer Phone Number	s-t-1-30_buyer-phone-number	String with length of 1 to 30 characters.	3
Delivery Address City	s-t-1-30_delivery-address-city	String with length of 1 to 30 characters.	3
Delivery Address Line One	s-t-1-30_delivery-address-line-one	String with length of 1 to 30 characters.	3
Delivery Address Line Two	s-t-1-30_delivery-address-line-two	String with length of 1 to 30 characters.	3
Delivery Address Postal Code	s-t-1-30_delivery-address-postal-code	String with length of 1 to 30 characters.	3
Delivery Address Country Code	i-t-1-3_delivery-address-country-code	Number with length of 1 to 3 digits.	3
Card Expected Validity	s-t-1-6_card-expected-validity	Date formatted as MMyyyy.	4
Token Expiration Date	s-t-10-10_token-expiration-date	Date formatted as yyyy-MM-dd.	5
Masked pan	s-t-1-36_token-masked-pan	String with length of 0 or 1-36 characters.	5

Parameters present in the response if they were requested with s-t-1-1024_dynamic-feedback parameter and were available at the time of providing the response.

Title	Parameter Name	Format	Version
Authorization Number	s-t-1-6_authorization-number	String with length of 1 to 6 characters.	5
Dynamic Reference Number	l-f-1-20_dynamic-reference-number	Integer value formatted as string with 1-20 numeric characters.	5
Card Type	s-t-1-30_card-type	String with length of 1 to 30.	5
Card Expiry Date	s-t-1-6_card-expiry-date	String with length of 1 to 6.	5
Error code	s-t-1-4_error-code	String with length of 1 to 4.	5
3DS authorization status	i-t-2-2_card-3ds-auth-status	String with length of 2.	5
3DS enrollment status	i-t-1-1_card-3ds-enrollment-status	String with length of 1.	5
3DS Charge Back	s-t-1-1_3ds-charge-back	String with length of 1.	5
Customer Country IP	i-t-1-3_customer-ip-country	String with length of 1 to 3.	5
Card Issued Country	i-t-1-3_card-issued-country	String with length of 1 to 3.	5
Last two digits on the card	i-t-2-2_card-pan-last2	String of digits with length of 2.	5
First six digits on the card	i-t-6-6_card-pan-first6	String of digits with length of 6.	5
Token	s-t-1-256_token-two-way	Token that was registered for the card that the used.	5
Card Product	s-t-1-8_card-product	Card product type (applied only to specific issuer).	5

Payment Success Result Form Example

```
<form id="integration-form" action="http://127.0.0.1:8081/test-shop/receipt"
method="post">
<input type="hidden" readonly="" name="i-f-1-11_interface-version" value="2">
<input type="hidden" readonly="" name="i-f-1-3_order-currency-code" value="978">
<input type="hidden" readonly="" name="s-t-1-26_filing-code" value="1234567890">
<input type="hidden" readonly="" name="s-f-1-20_reference-number"
value="1230000045678">
<input type="hidden" readonly="" name="l-f-1-20_order-gross-amount" value="1230">
<input type="hidden" readonly="" name="s-f-1-10_software-version" value="1.0.1467">
<input type="hidden" readonly="" name="l-f-1-20_transaction-number"
value="5120103424">
<input type="hidden" readonly="" name="s-f-1-36_order-number"
value="1325141401745">
<input type="hidden" readonly="" name="s-f-1-40_payment-method"
value="nordea-e-payment">
<input type="hidden" readonly="" name="s-t-1-36_order-note" value="x213">
<input type="hidden" readonly="" name="s-t-256-256_signature-one"
value="27F6C1B8EFDD6B10F33D8D09FE1565B79C1937CEF128D972E01162BDA200727E5CE21BA1B3BE
46143763BE31EE372F7D71AE91153703B04BCBCF9396BBC9681EB3862B31B29D21CCC0F552E0871018E
C03793AC2BFD0EC1BE9325E9A3E3BC2B4BDC89BCD222593BC7B78B0C80A3A9254CBDCBF3B7D07B05991
0B968189FC5AD5">
<input type="hidden" readonly="" name="s-t-256-256_signature-two"
value="295601A35A4117AE6F2FABE35ED24CA4E2569CF59E87CBB759465E8E89A86E7F57B223FC9C33
F5B6856734A77E450BCD599D51118C5F9408B66C3B0E32EC6088414E76B43F2912549D26FC3FE1F8DD6
C7A13CFCC75A44BECD00CC1290B8147A9929DD1094C9558062F7CA9533E5E92B76B233C8DB6B7D4BC05
7A82E671C5667F">
<input type="hidden" readonly="" name="t-f-14-19_order-timestamp" value="2011-12-29
06:50:01">
<input class="forward-button" type="submit" name="s-t-1-40_shop-receipt__phase"
value="Siirry kuittisivulle">
</form>
```

2.6.3.2 Checking Payment Success Result

It is important to do the following checks on the success result:

1. l-f-1-20_transaction-number must be present in the response.
2. s-t-256-256_signature-one and/or s-t-256-256_signature-two are valid.
3. s-f-1-36_order-number and t-f-14-19_order-timestamp matches to the payment request.
All shop systems should save order number and order time stamp before sending the payment request and check that the values in response matches to the values in the request.
4. l-f-1-20_order-gross-amount and i-f-1-3_order-currency-code matches to the payment request. All shop systems should save amount and currency before sending the payment request and check that the values in the response match the values in the request.

The above checks are necessary to check that the response is done by Verifone and that the response really is a Payment Success Result. It is strongly advisable to actually check that all of the following parameters are present in the Payment Success Result Post:

- i-f-1-11_interface-version
- i-f-1-3_order-currency-code
- l-f-1-20_order-gross-amount
- s-f-1-10_software-version
- l-f-1-20_transaction-number
- s-f-1-40_payment-method
- s-t-1-36_order-note (if it was provided in request)
- t-f-14-19_order-timestamp
- s-t-1-256_token (if registration of token was requested)

Web Shops should also implement the replacement ";" with ";;" in the parameter values in signature validation for responses (similarly than in requests).

Note: s-t-1-40_shop-receipt__phase, s-t-1-40_shop-order__phase and s-t-1-40_submit that may be in the response are not used in signature calculation by Verifone and should be excluded from the signature verification process.

2.6.3.3 Payment Success Result Post Response

On successful processing of the post shop system will respond with HTTP status 200 OK. Any other response code indicates availability problem in the shop system.

2.6.4 Payment Cancel Result Post

2.6.4.1 Payment Cancel Result Form Parameters

Title	Parameter Name	Format
Order Number	s-f-1-36_order-number	String with length of 1-36 characters.
Cancel Reason	s-t-1-30_cancel-reason	String with length of 1-30 characters.
Software Version	s-f-1-10_software-version	String with length of 1-10 characters.
Interface Version	i-f-1-11_interface-version	String with length of 1-11 numeric characters.
Signature One	s-t-256-256_signature-one	String with length of 256-512 characters.
Signature Two	s-t-256-256_signature-two	String with length of 256-512 characters.

Payment Cancel Result Form Example

```
<form action="http://127.0.0.1:8081/test-shop/cancel" method="post">
<input type="hidden" readonly="" name="i-f-1-11_interface-version" value="2">
<input type="hidden" readonly="" name="s-f-1-10_software-version" value="1.0.1467">
<input type="hidden" readonly="" name="s-f-1-36_order-number"
value="1325141018121">
<input type="hidden" readonly="" name="s-t-1-30_cancel-reason"
value="cancel-payment-expired">
<input type="hidden" readonly="" name="s-t-256-256_signature-one"
value="46D30C64DF91453F2B02622DDFDB78425B1FDFC7636F355D881674DCABBF95EDE2100A95971
AB823C9B52CFADB595895C8818664B9E4BA2C2F958B61C19EB283DCB4CC7EF0C8D91B93B0A5D3E5D95B
1C10FF6F5D37DC134B3E215EEE6974DFF7AD7010C24C731BBC3863BDBC3B57C4A104D5DEB46398A834A
C1073624D3075A">
<input type="hidden" readonly="" name="s-t-256-256_signature-two"
value="5B498C3BAB60351A03CF5DF90AEE441F85E3F64EC6E091207A7FC9C023341F8F8D2D18D39008
516F54FBC7DC78DA65D323AD463F74E82081D5676762C83B903E9499FC8758806D5061A2D2A5423D585
AE8FE6914C5AD442F2CA9951264748E039D7B5C8C41DAEB5504F0275FB074EC9E128F5EA90DA946404
AF1F77D70594CE">
<input class="backward-button" type="submit" name="s-t-1-40_shop-order__phase"
value="Takaisin tilaussivulle">
</div>
</form>
```

2.6.4.2 Payment Cancel Result Post Response

On successful processing of the post shop system will respond with HTTP status 200 OK. Any other response code indicates availability problem in the shop system.

3 Usage

3.1 Service Agreement

Service agreement is required for using and testing Payment Interface. The service agreement can be acquired through Verifone sales:

Sweden

Email: avtalsgruppen@verifone.se

3.2 Technical Support

Technical support for integration is available through Verifone customer support:

Sweden

Email: ecom-integration@verifone.se

3.3 Exchanging Keys

Customer generates 1024 bit long RSA private key - public key pair (or self-signed X.509 certificate) and delivers their public key in PEM format (or certificate in .cer format) to Verifone via TCS Client.

Customer can use `verifone-key-pair-generator.jar` to generate the keys. The key pair generator is provided in the integration kit. The key pair generator will generate public key PEM-file, unencrypted private key PEM-file and P12-file containing both public key and encrypted private key.

```
java -jar verifone-key-pair-generator.jar
```

Verifone delivers an E-Commerce System public key to customers via Verifone's TCS reporting service.

3.4 Implementation

3.4.1 Testing

It is recommended to test the implementation first in customer test environment with demo merchant keys. The demo merchant agreement code is 'demo-merchant-agreement'. The demo keys are provided in integration kit.

The password for demo-merchant-agreement.p12 is 'password' (without quotes).

Customer test environment is available in the following URL:

Payment Page: <https://epayment.test.point.fi/pw/payment>

Test Shop: <https://epayment.test.point.fi/test-shop/>

3.4.2 Production

Production environment URLs are:

Sweden

Node 1: <https://epayment1.point.se/pw/payment>

Node 2: <https://epayment2.point.se/pw/payment>

Node 3: <https://epayment3.point.se/pw/payment>