

Abila netFORUM Enterprise integration to Sage Gateway

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Summary

Summary: this document explains how Abila netFORUM Enterprise tokenizes credit cards with Sage and makes authorizations, captures, voids and credits. Most of this document relates to credit card processing and not virtual checks. Virtual checks are discussed at the end of the document.

The primary focus of this document is on the direct integration points, in particular around tokenization and authorizations, and not on the specific pages and operations in netFORUM that trigger these operations. For more details on this, see: [Electronic payment processing - AbilaWiki](#) (login required).

netFORUM Enterprise is a web-based CRM that manages not-for-profit organizations. netFORUM has three applications that perform electronic payments:

- A website for employees of the organization (called iWeb). Credit cards can be keyed into this application for payments. Additionally, various batch processes
- A website for members/consumers (called eWeb) that has an eCommerce store.
- A web service API (called xWeb) that can take electronic payments that originate in an external system. The external system will send a credit card request into netFORUM and netFORUM will attempt to authorize the payment

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Sage Payment Processing Services in Integration

netFORUM uses the following services and operations in the credit card integration to Sage. Each is explained in more detail below. We are not using any of Sage's user interface features in the integration.

Service: https://gateway.sagepayments.net/web_services/wsVault/wsVault.asmx

Operation: INSERT_CREDIT_CARD_DATA - creates a token

Service: <https://www.sageexchange.com/VirtualPaymentTerminal/frmPayment.aspx>

Sale – TransactionType “01”

Authorization – TransactionType “02”

Credit – TransactionType “06”

Service: https://gateway.sagepayments.net/web_services/wsvtextensions/purchase_card_level_3.asmx

Operations:

BANKCARD_PRIOR_AUTH_SALE- captures a prior authorization

BANKCARD_VOID

Credit Card Token and Authorization Flow

The following diagrams illustrates how credit cards are tokenized and authorized.

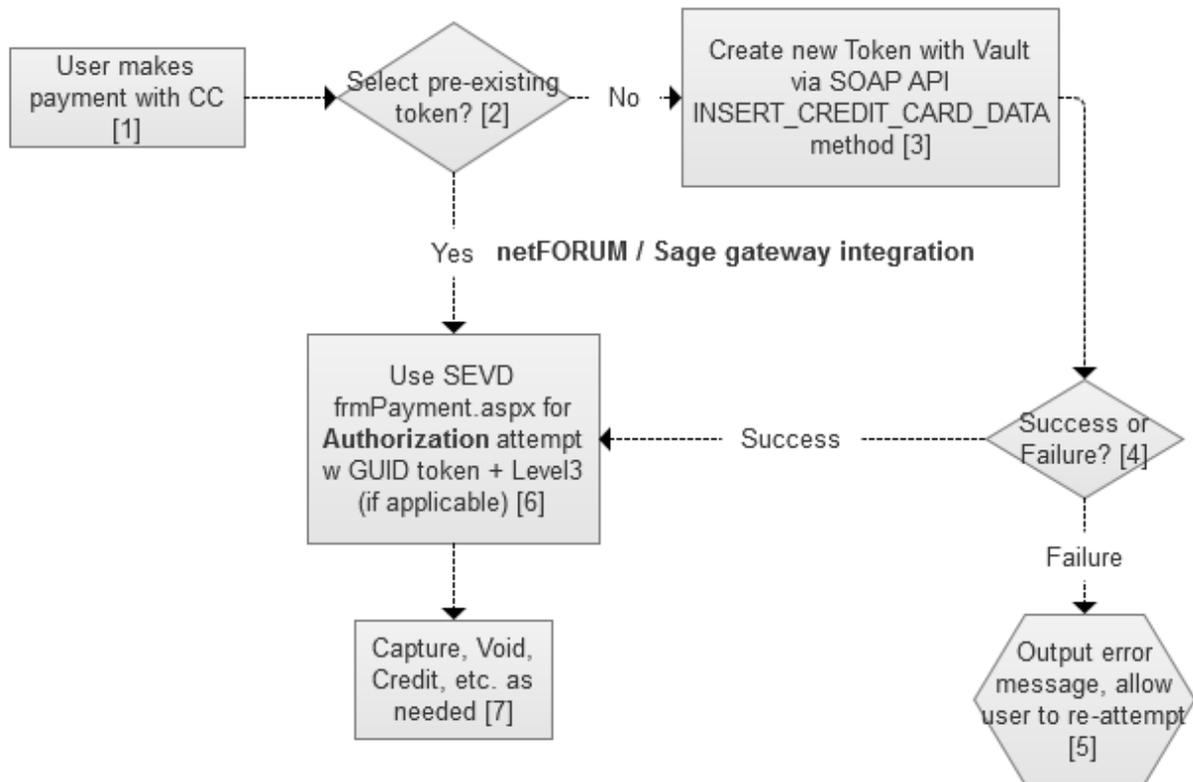


Figure 1: current netFORUM Enterprise – Sage token / authorization flow for credit cards

User makes payment with CC

This step in box [1] covers several scenarios, some of which are triggered by a human user keying in a credit card on a webpage, and some of which are triggered by an automated process. They include:

- A consumer purchasing a product through netFORUM’s online website on which they key in their own credit card onto a web form. This is an ecommerce card-not-present transaction.
- Staff person at association keying in a consumer’s credit card into netFORUM based on the credit card being written onto a paper form (such as a membership dues renewal notice), or from a user providing their credit card number over the phone.
- A 3rd party integration to netFORUM Enterprise that prompts a user to enter a credit card for a payment. The credit card number is then passed securely to netFORUM through netFORUM’s API web service, for authorization.
- A customer’s previously saved token in netFORUM, pointing to a token in the Sage vault, is referenced to make a payment for a scheduled installment such as a membership renewal, monthly fundraising donation, or an installment payment. In these scenarios, the cardholder provided their credit card earlier and consented to payments at a future date. netFORUM has a batch processing task that runs these transactions in bulk.

The “Select pre-existing Token?” Step

In some places in netFORUM, the application attempts a CC payment authorization with a previously created GUID (token) that was created in the past, as illustrated in box [2].

For example, pre-existing tokens are used for recurring monthly donations, or installment payments (pay a \$1,000 annual membership in four quarterly installments of \$250 each), or automatic membership renewals. In these cases, there will be no CVV with these installment payments although their might have been a CVV to go with the initial payment. These types of automatic payments will have a “pre-existing token.”

Additionally, in some payment pages in netFORUM, a user can choose to make a payment with a previously-vaulted credit card, instead of entering the CC again.

Create New Token with Vault

If, at the time the authorization needs to happen, netFORUM does *not* have a pre-existing token but instead is processing a newly-entered credit card, then netFORUM will attempt to create a new token (“Create new Token with Vault” [3]) with the payment information provided.

If the response from the gateway is successful, then netFORUM attempts to see if the particular customer already has a token of the same token value returned in the response, so that netFORUM doesn’t duplicate tokens in the case that the user is entering a credit card that has already been tokenized.

Service location: https://gateway.sagepayments.net/web_services/wsVault/wsVault.asmx

Operation: [INSERT CREDIT CARD DATA](#)

Perform Payment Authorization

At this point, we either have a previously existing Token GUID, or we have just created a new Token GUID.

Next, netFORUM will attempt an authorization for the payment amount by posting an authorization request to SEVD (Sage Exchange Virtual Desktop) frmPayment.aspx, using the Token GUID. If there is Level II and Level III data, with the transaction, we add it to the request. This is shown in box [6].

Service location: <https://www.sageexchange.com/VirtualPaymentTerminal/frmPayment.aspx>

Sample request for an authorization (not showing Level II or Level III data):

```
<?xml version="1.0" encoding="utf-8"?>
<Request_v1>
  <Application>
    <ApplicationID>ABILNETF2015100MAN_ABO5USEN</ApplicationID>
    <LanguageID>EN</LanguageID>
  </Application>
  <Payments>
    <PaymentType>
      <Merchant>
        <MerchantID>345871618445</MerchantID>
      </Merchant>
      <TransactionBase>
        <TransactionID>83bcd6e5</TransactionID>
      </TransactionBase>
    </PaymentType>
  </Payments>
</Request_v1>
```

```
<TransactionType>02</TransactionType>
<Reference1>2015-09-22-BATCH-001-DBH|FoOVIQRuU</Reference1>
<Amount>27.00</Amount>
</TransactionBase>
<VaultStorage>
<GUID>7ac2b587e6a2490b9dfbf344df795988</GUID>
<Service>RETRIEVE</Service>
</VaultStorage>
<Postback />
</PaymentType>
</Payments>
</Request_v1>
```

Capture

netFORUM captures prior authorizations with this operation below. netFORUM performs captures in two ways:

- For purchases of non-shippable items (e.g. membership dues, event registrations, donations), netFORUM attempts a capture immediately after a successful authorization.
- For shippable items, netFORUM attempts a capture when the item is fulfilled (shipped) in netFORUM.

Service: https://gateway.sagepayments.net/web_services/wsvtextensions/purchase_card_level_3.asmx

Operation: BANKCARD_PRIOR_AUTH_SALE

Void

netFORUM voids transactions with this operation. A void can occur if a staff person wants to correct a mistaken purchase.

Service: https://gateway.sagepayments.net/web_services/wsvtextensions/purchase_card_level_3.asmx

Operation: BANKCARD_VOID

Credit

netFORUM in some cases gives a credit to an account in the case of a return of an item.

Service location: <https://www.sageexchange.com/VirtualPaymentTerminal/frmPayment.aspx>

Operation:

TransactionType of "06"

Sale

Generally, netFORUM does not perform Sale transactions. Instead, netFORUM processes payments in separate authorization followed by capture. But there are a few scenarios where netFORUM does a Sale. In these cases, netFORUM uses the following operation:

Service location: <https://www.sageexchange.com/VirtualPaymentTerminal/frmPayment.aspx>

Operation:

TransactionType of "06"

Creating Token Without Immediate Payment

In some cases, netFORUM allows a user to create a token for a credit card or ACH but not immediately perform any payments. The Token can be used for future payments.

In these cases, netFORUM follows the same flow as described in Figure 1. If the payment method is a credit card, then if the token is created successfully, netFORUM next will attempt to authorize a \$1 authorization to validate that the credit card account is valid.

If the authorization attempt succeeds, netFORUM will immediately attempt to void the authorization. If, for some reason, the void attempt is not made, or if it fails, due to any unexpected error, the authorization eventually will lapse.

If desired, a client may change this amount to a different value by updating the AuthorizationDefaultAmount value in web.config to a different amount. The Sage payment gateway does not support \$0 authorizations, so this value must be greater than 0.

ACH tokens, by contrast, do not attempt a trial authorization when creating a token in this scenario.

Virtual Checks

Sale

Service: https://www.sagepayments.net/web_services/wsVault/wsVaultVirtualCheck.aspx

Operation: VIRTUAL_CHECK_WEB_SALE

Other Operations

Authorization, Capture, Void: not applicable