Abila Freestone / netFORUM Enterprise Course Catalog Sync

Last Update Date: 18 April 2018
Documentation Version: 1.3

Summary: this document outlines the specifications and field mappings between netFORUM Enterprise and Freestone in the automatic course catalog sync that is part of the integration between netFORUM Enterprise and Freestone. Editor note: source document located in TFS ID 94717.

This document is available in PDF format at netFORUM Enterprise / Freestone Course Catalog Sync Data Mappings | Knowledge Base | Abila

Contents

Document Version and Updates

Version	Date	Changes
1.0		Original
1.1	2/21/2018	Addition of new web methods GetEventSubstitutions and GetRevokedCourseOrders
1.2	3/21/2018	Addition of new web method GetPurchasedCoursesByCustomer
1.3	4/18/2018	Addition of CustomerKey parameter to GetEventSubstitutions

Introduction

The purpose of the automated course catalog sync between netFORUM Enterprise and Freestone is to allow a client to enter a course (as either an Event or a Publication) in netFORUM and have the information about the course automatically flow into Freestone without manual double entry into both systems.

The catalog sync will occur on a regular interval that can be adjusted as needed. If a particular netFORUM course needs to be synced immediately, then a button can be pressed in MyFreestone to pull the data on demand.

This document explains how to set up Events and Publications in netFORUM so they will flow into the right kinds of courses with the right settings in Freestone. This document also lists the specific fields that flow from netFORUM into Freestone. The document contains some technical explanations to assist analysts in understanding, optimizing and personalizing the integration. Finally, the document explains some possible customization opportunities if needed.

These field mapping are categorized by netFORUM entities (event, speaker, fee, publication, author etc.).

There are two major areas of netFORUM that are included in the course catalog sync: events and publications. While these are considered very different entities in different modules in Enterprise, In Freestone, events and publications both map to courses.

Courses to be synched must originate in netFORUM. If you create the course first in Freestone, and then attempt to create the "same" course in netFORUM, the sync will not be able to associate the two courses as being the same course in both systems.

Specifically, the field mappings explain:

Web Service Node: the name of the node in the netFORUM web service.
Property: the name of the property in the netFORUM web service.
netFORUM Field: the name of the field in netFORUM. In some cases, the related name of the database table and column are also provided.
Freestone Field: the name of the field(s) in Freestone which use the value.
Notes: any additional explanation of the particular field.

Additional notes on responses:

Generally, any field that has a NULL or empty value in netFORUM will *not* have an element returned. Do not expect to see an empty node like <FeeCategory />, or <FeeCategory></FeeCategory> or <FeeCategory nil="true" />. Instead, the entire element will be omitted from the response.

Events

Data about netFORUM Events is listed below. The data is retrieved by a web method in netFORUM xWeb called GetEventInformation described elsewhere in this document.

Event

Describes a single netFORUM Event
Web Service Node: Course

Property	**netFORUM Field**	**Freestone Field**	**Notes**
CourseType	n/a	n/a	Value is “Event”, not stored, used to specify follow up API call
CourseKey	Event Key (ev_event.evt_key)	Course External ID (might also write into a non user editable field) ***Should not be changed***	This is a internal GUID value used to identify a specific netFORUM Event
CourseTitle	Event Title (ev_event.evt_title)	Course Title & Full Chapter Title	
CourseHTMLDescription	Event HTML Description	Course Description	
CourseStartDateTime	Evt_start_date and evt_start_time		
CourseEndDateTime	Evt_end_date and evt_end_time		
LastChangedDate	Event Last Changed Date - if the Event does not have a change date, then the add date is used.	N/A	

Speaker

Describes a **speaker** at a netFORUM Event. An Event may have zero, one or multiple speakers. Each speaker is also a customer in netFORUM. This section contains a mix of fields from the event/session faculty record and the related customer/individual/relationship of that speaker. A speaker may be associated to the overall event as well as to specific sessions within an event.

Web Service Node: Speakers / Speaker

Property	**netFORUM Field**	**Freestone Field**	**Notes**
SpeakerKey	Speaker Key (ev_event_faculty.fac_key)	Speaker External ID	Primary key about a faculty in netFORUM.
CustomerKey	Customer Key	N/A	Primary key about a customer in netFORUM
Prefix	Prefix - Dr., Mr., Mrs., etc.	Speaker Prefix	
FirstName	First Name	Speaker First Name	
MiddleName	Middle Name	Speaker Middle Name	
LastName	Last Name	Speaker Last Name	
Suffix	Suffix - Jr. Sr., III, etc.	Speaker Suffix	
Designation	Designation (CPA, MD, JD, etc.)	Speaker Suffix (concatenated into suffix)	
Title	Title	Speaker Title	Defaults to the title of the individual's organization relationship for the particular speaker record (e.g. the speaker may be speaking on behalf of a non-primary relationship, such as a part-time adjunct faculty position); if none, then uses individual's primary title, if any.
Organization	Organization Name	Speaker Firm	Similar to title above. If there is an organization relationship for the specific event speaker record, then that Organization Name is used; if none, then uses

			individual’s primary organization, if any. If none, then uses the organization name entered directly into the individual, if any.
Bio	Bio	Speaker Bio	Defaults to event faculty bio; if none, then uses general bio at the customer level, if any.
City	City (adr_city)		If the speaker has an address specific for the event, then the city from that address is used; otherwise the speaker’s primary address’s city is used
State	State (adr_state)		See “City” for logic of how the state is used.
Country	Country (adr_country)		See “City” for logic of how the state is used.
LastChangedDate	Last Changed Date - the most recent of the the change dates for individual, faculty, speaker or relationship.		

Credits

In netFORUM, an event or session might have zero, one or more credits. Credits may be associated to the overall event, or to specific sessions within an event. A credit might optionally be associated to a certification program.

Web Service Node: Credits / Credit

Property	**netFORUM Field**	**Freestone Field**	**Notes**
CreditKey	Event Credit Key (ev_event_credit.ece_key)	ApprovedCredit External ID	Primary key for the event credit

Credits	Credits (ece_credit) - the credit amount. This is a decimal field, so value could be 3, 2.5, 1.75, etc.	ApprovedCredit num_hours	
CEUTypeKey	CEU Type Key (ce_ceu_type.cet_key)	N/A	
CEUType	CEU Type	ApprovedCredit credit_type	CEU Type is checked (example “General Ethics”)
ProgramKey	Certification Program Key (cpg_key)		
ProgramCode	Certification Program Code (ce_cert_program.cpg_code)	Credit Reporting Organization Abbreviation	CEU Credits can optionally be associated to a Certification Program.
ProgramName	Certification Program Name	Credit Reporting Organization Name	(example “ZZ State Bar”)
LastChangedDate	Last Changed Date - most recent change date of the Event Credit, or add date if there is no change date.	N/A	

Event Fees

In the netFORUM events module, an event can have fees. In netFORUM, event fees are also linked to a netFORUM product. Event fees and products are terms that are used interchangeably. They are used to describe an overall event fee. Within the Fee are one or more Prices (see below). A free event won’t have any event fees.

Only registration fees are included in the sync; cancellation, transfer and substitution fees for an event are not included.

Web Service Node: Fees / Fee

Property	netFORUM Field	Freestone Field	Notes

FeeKey	Fee Key (oe_product.prd_key)	N/A	
ProductCode	Product Code (prd_code)	Product Provider_Product_Code	
ProductName	Fee Name (prd_name)	Product Name_Override	
FeeCategory	Fee Category (ev_event_fee_category.efc_code) (25 character max to match with publication product format limit)	Medium Type	See Fee Category for setup guide.
LastChangedDate	Last Changed Date	N/A	

Price and Attribute

In netFORUM, an event fee will have one or more **prices**. The price determines the actual cost, as well as GL Accounts. A price, in turn, has one or more **price attributes** which govern a customer's eligibility to qualify to pay for the price (e.g. a particular price might be available only to members).

Note that in the integration, Price and Price Attribute are flattened into one entity. This requires that any Prices have at most one price attribute. If there are more than one price attributes for a price, then the price attribute with the highest "start date" is selected.

Web Service Node: Prices / Price

Property	netFORUM Field	Freestone Field	Notes
PriceKey	Price Key		
PriceCode	Price Code		
UnitPrice	Unit Price - the cost of the price, eg "99.99" (prc_price)	Product Price	*** if Member Flag and/or Member Type is set...this is the price for that flag or level
MemberFlag	Member Flag, from Price Attribute		Used to determine if this price is for

	(pat_member_flag)		members or non-members
MemberType	Member Type, if any, from Price Attribute (mbt_code)	Multi-Level Membership Name	If the MemberFlag property is 1 (meaning only members qualify), then this property might also be set, and if there is a value, this indicates that the price is available only for members of this specific member type (e.g. student, professional, national, association, etc. Note that member types vary from one customer to the next). If set...this denotes multi level membership pricing
FeeClass	Fee Class, from price attribute. Can be at most one of: [pre reg;early;standard;late] (pat_fee_class)		Currently only using ‘standard’ since we do not have early/late registration logic
LastChangedDate	Last Change Date; if no change date, then add date is used.		

Publication

While Publications and Events both share the same web service properties, these properties might map internally to different netFORUM fields. For example, properties in Course for events map to an event, and for a Publication, they map to a publication. In some cases, certain properties that are relevant for events do not apply to publication (e.g. pre-registration date), so those are left out.

The data about a publication is returned by a netFORUM xWeb web method called GetPublicationInformationXML described elsewhere in this document.

Product/Publication

Describes a single Publication/Product
Web Service Node: Course

Property	**netFORUM Field**	**Freestone Field**	**Notes**
CourseType	n/a	n/a	Value is “Publication”
CourseKey	Product Key (prd_key)	Course External ID (might also write into a non user editable field) ***Should not be changed***	This is a internal GUID value used to identify a specific netFORUM Product
CourseTitle	Product Name	Course & Chapter Title	
CourseStartDateTime	prd_start_date		
CourseEndDateTime	prd_end_date		
CourseHTMLDescription	Product HTML Description (prd_online_abstract)	Course Description	
LastChangedDate	Product/Publication Last Changed Date - if no change date, then the add date is used.		

Speaker

Describes an **author** of a netFORUM publication that is entered in the People/Companies child form on the Miscellaneous tab of the Publication profile. Note that while it is possible to add Organizations to this child form, only Individuals are returned in the sync. A publication may have zero, one or multiple authors. Each author is also a customer in netFORUM.

Web Service Node: Speakers / Speaker

Property	netFORUM Field	Freestone Field	Notes
SpeakerKey	Product Affiliation key (oe_product_affiliation.pra_key)		Primary key about a publication author in netFORUM.
CustomerKey	Customer Key		Primary key about a customer in netFORUM
Prefix	Prefix - Dr., Mr., Mrs., etc.	Speaker Prefix	
FirstName	First Name	Speaker First Name	
MiddleName	Middle Name	Speaker Middle Name	
LastName	Last Name	Speaker Last Name	
Suffix	Suffix - Jr. Sr., III, etc.	Speaker Suffix	
Designation	Designation (CPA, MD, JD, etc.)	Speaker Suffix (concatenated into suffix)	
Title	Title	Speaker Title	The title in the customer record.
Organization	Organization Name	Speaker Firm	Customer's primary organization name.
Bio	Bio	Speaker Bio	Customer Bio
City	adr_city		City of the customer's primary address
State	State (adr_state)		State of the customer's primary address
Country	Country (adr_country)		Country of the customer's primary address
LastChangedDate	Last Changed Date - the most recent of the the change dates for individual, Publication Author, customer, or		

	relationship.		

Note that in contrast with event speakers, a publication author will be associated to the customer’s main bio, primary address, and primary organization. Event speakers can have a bio for a specific event, and may choose a relationship for a specific event and a different address for a specific event.

Credits

In netFORUM, a publication might have zero, one or more credits. A credit might optionally be associated to a certification program.

Web Service Node: Credits / Credit

Property	**netFORUM Field**	**Freestone Field**	**Notes**
CreditKey	Product Credit Key (ce_product_credit.Cpp_key)		Primary key for the product credit
Credits	Credits (cpp_credit) - the credit amount. This is a decimal field, so value could be 3, 2.5, 1.75, etc.	ApprovedCredit->num_hours	
CEUTypeKey	CEU Type Key (ce_ceu_type.cet_key)		
CEUType	CEU Type	ApprovedCredit->credit_type	CEU Type is checked (example “General Ethics”)
ProgramKey	Certification Program Key (cpg_key)		
ProgramCode	Certification Program Code (ce_cert_program.cpg_code)	Credit Reporting Organization Abbreviation	Product Credits can optionally be associated to a Certification Program.
ProgramName	Certification Program Name	Credit Reporting Organization Name	(example “NC State Bar”)

LastChangedDate	Last Changed Date - most recent change date of the Product Credit, or add date if there is no change date.		

Fee

While Events have a defined Fee, Publications don't have this. Therefore this section is really about the Product.

Web Service Node: Fees / Fee

Property	**netFORUM Field**	**Freestone Field**	**Notes**
FeeKey	Product Code (oe_product.prd_key)		
ProductCode	Product Code (prd_code)	Product->Provider_Product_Code	
ProductName	Product Name (prd_name)	Product->Name_Override	
FeeCategory	Product Format	Medium Type	See Event Fee and Price for setup
LastChangedDate	Last Changed Date		

Price and Attribute

In netFORUM, a publication will have one or more **prices**. The price determines the actual cost, as well as GL Accounts. A price, in turn, has one or more **price attributes** which govern a customer's eligibility to qualify to pay for the price (e.g. a particular price might be available only to members).

Note that in the integration, Price and Price Attribute are flattened into one entity. This requires that any Prices have at most one price attribute. If there are more than one price attributes for a price, then the price attribute with the highest "start date" is selected.

Web Service Node: Prices / Price

Property	**netFORUM Field**	**Freestone Field**	**Notes**
PriceKey	Price Key		
PriceCode	Price Code (prc_code)		
UnitPrice	Unit Price - the cost of the price, eg “99.99” (prc_price)	Product Price	*** if Member Flag and/or Member Type is set...this is the price for that flag or level
MemberFlag	Member Flag, from Price Attribute (pat_member_flag)		Used to determine if this price is for members or non-members
MemberType	Member Type, if any, from Price Attribute (mbt_code)	Multi-Level Membership Name	If set...this denotes multi level membership pricing
FeeClass	n/a		For netFORUM publications, this value is always “standard”. netFORUM publication price attributes do not have a Fee Class property; this property only exists for Events
LastChangedDate	Last Change Date; if no change date, then add date is used.		

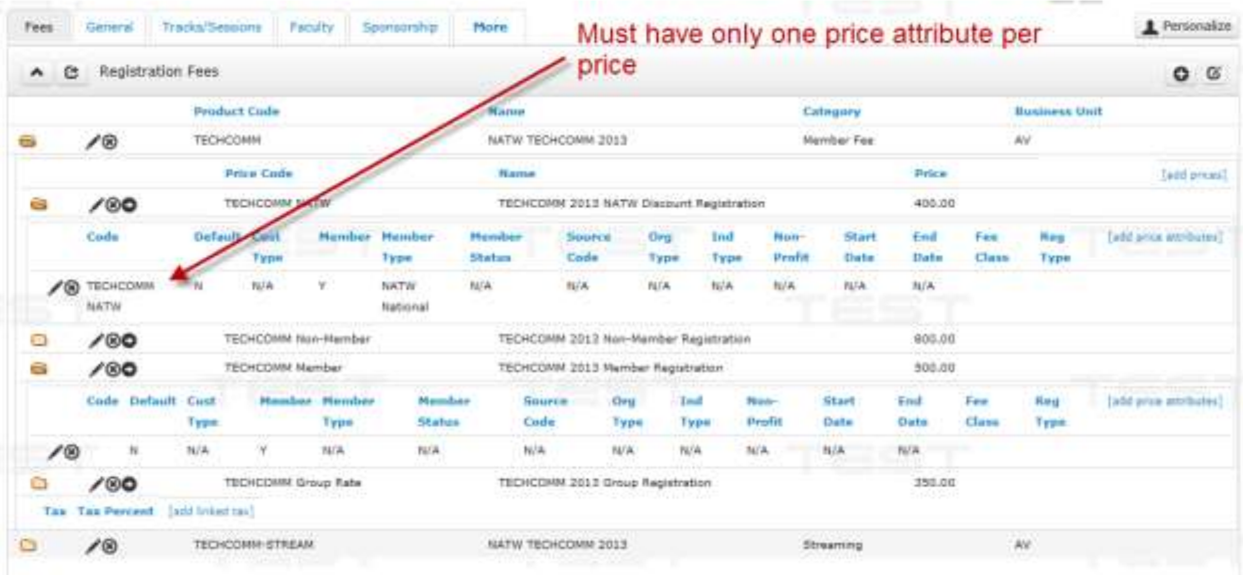
Implementation Guidelines

The sections below explain how to set up your netFORUM site for the catalog sync. You must configure events and publications in a certain way in order for them to be recognized properly by the catalog sync and Freestone.

Event Fee and Price

In netFORUM’s Event Setup, for the Event Fee and Price, ensure that product/fee code (20 character) and price codes (20 character) are not duplicated within a single Event.

For a Fee Price, there can be only one price attribute for the consideration of member flag and member type. If there are multiple price attributes, then only one will be chosen, the one with the latest start date.



Must have only one price attribute per price

Registration Fees

Product Code	Name	Category	Business Unit
TECHCOMM	NATW TECHCOMM 2013	Member Fee	AV

Price Code	Name	Price	[add prices]
TECHCOMM NATW	TECHCOMM 2013 NATW Discount Registration	400.00	

Code	Default	Cust Type	Member	Member Type	Member Status	Source Code	Org Type	Ind Type	Non-Profit	Start Date	End Date	Fee Class	Reg Type	[add price attributes]
TECHCOMM NATW	N	N/A	Y	NATW National	N/A	N/A	N/A	N/A	N/A	N/A	N/A			

Price Code	Name	Price
TECHCOMM Non-Member	TECHCOMM 2012 Non-Member Registration	800.00
TECHCOMM Member	TECHCOMM 2013 Member Registration	500.00

Code	Default	Cust Type	Member	Member Type	Member Status	Source Code	Org Type	Ind Type	Non-Profit	Start Date	End Date	Fee Class	Reg Type	[add price attributes]
	N	N/A	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			

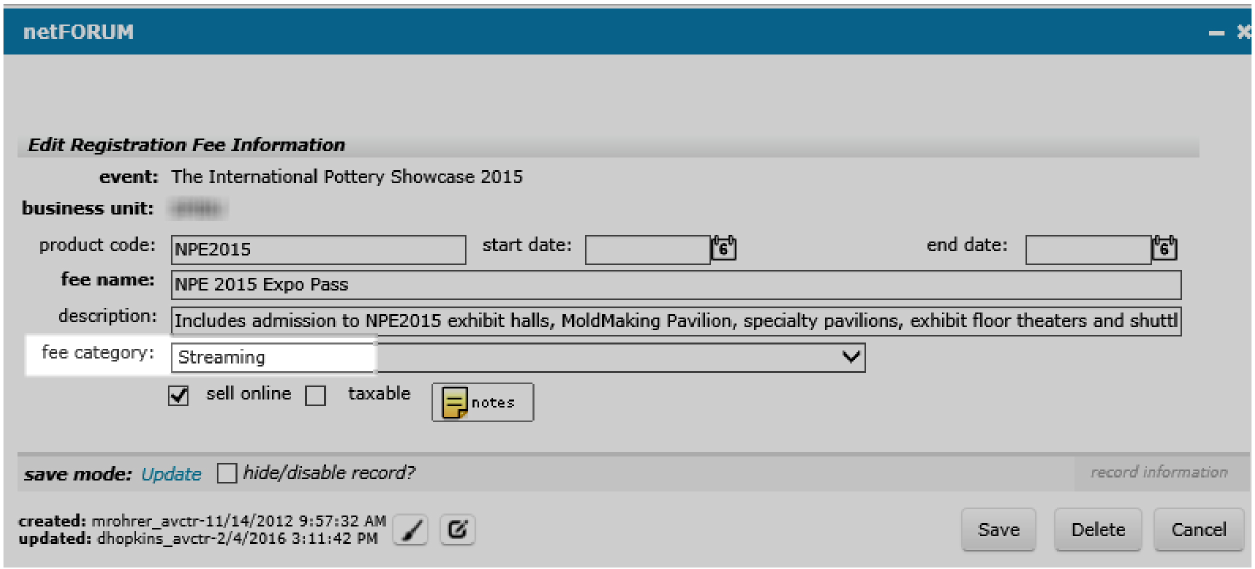
Price Code	Name	Price
TECHCOMM Group Rate	TECHCOMM 2012 Group Registration	350.00

Tax Tax Percent [add linked tax]

Product Code	Name	Category	Business Unit
TECHCOMM-STREAM	NATW TECHCOMM 2013	Streaming	AV

The various course types in Freestone are entered in the Event Fee Category. You must add each of these fee categories that your organization uses in the fee category setup area in the netFORUM events module, from the Events Setup page.

Setup page for Event Fee Categories:



Edit Registration Fee Information

event: The International Pottery Showcase 2015

business unit: [redacted]

product code: NPE2015 start date: end date:

fee name: NPE 2015 Expo Pass

description: Includes admission to NPE2015 exhibit halls, MoldMaking Pavilion, specialty pavilions, exhibit floor theaters and shuttl

fee category: Streaming

☑ sell online □ taxable

save mode: *Update* □ *hide/disable record?*

created: mrohrer_avctr-11/14/2012 9:57:32 AM
updated: dhopkins_avctr-2/4/2016 3:11:42 PM

Here are some of the most commonly used course types. Each Freestone client may use a different set of course types:

- Streaming
- Live Webcast
- Live Webcast + Streaming
- Attend In-Person
- Online Materials
- *For the remaining codes for your own organization, please refer to list in Freestone.*

Note: the sync does not use the Event Type or Event Category.

Publication

The **product format** of the publication is used to determine the course type in Freestone. You will need to add any specific product format codes in the Inventory setup so they will be available for selection when you manage your publications. For the list of values, see the same list as in the Event & Fee setup.

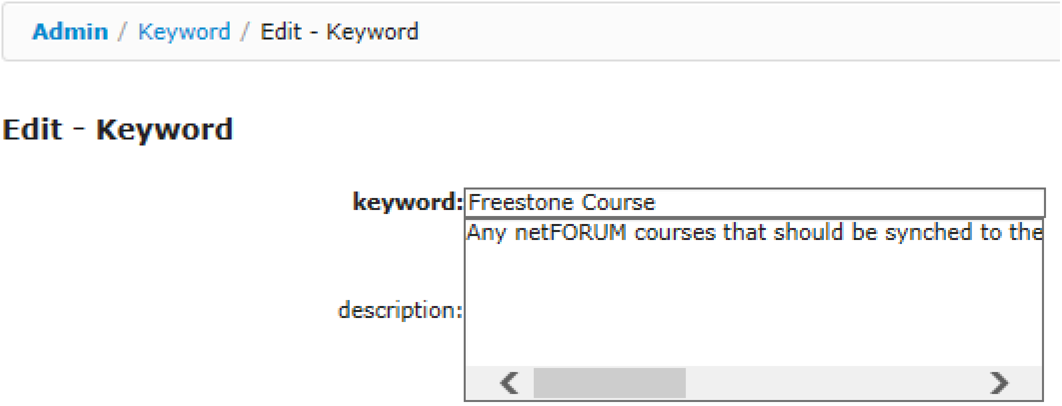
Member Type Setup

netFORUM memberships have a **member type**. If any courses have prices that are restricted to specific member types that come over in the catalog sync, then in Freestone, this member type will be added to the corresponding member type list in Freestone for that particular member type.

Keywords

To include a netFORUM course in the catalog sync, the course must have a “Freestone Course” tag selected. If the course does not have this keyword, then it is excluded from the catalog sync.

The catalog sync setup will add the **Freestone Course** keyword to your netFORUM site:



Edit - Keyword

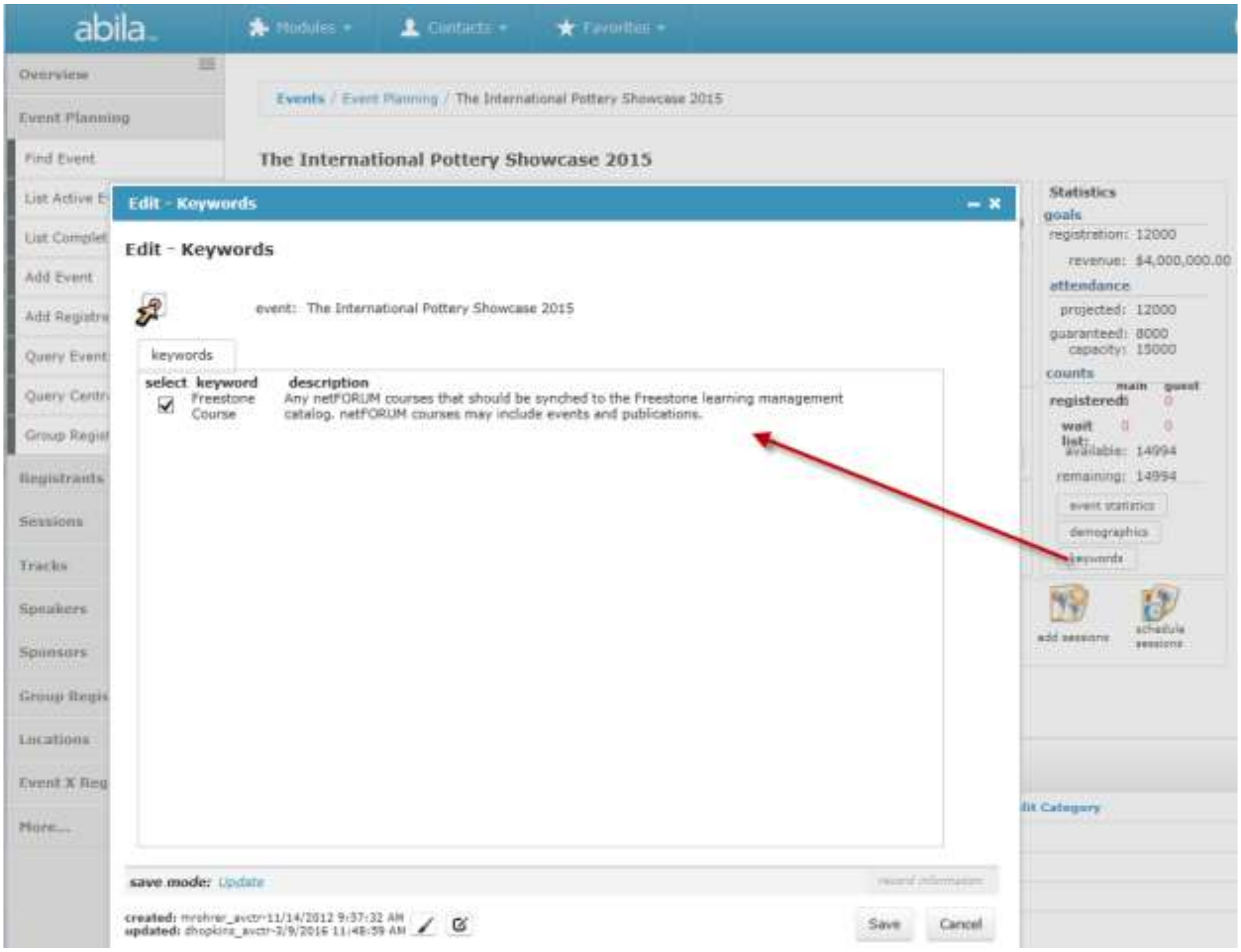
keyword: Freestone Course

description: Any netFORUM courses that should be synched to the

Next, for any events or publications you want to sync, add the Freestone Course keyword to the event or publication.

Event Keywords

Setting Event Keywords:



Events / Event Planning / The International Pottery Showcase 2015

The International Pottery Showcase 2015

Edit - Keywords

Edit - Keywords

event: The International Pottery Showcase 2015

keywords

select	keyword	description
☑	Freestone Course	Any netFORUM courses that should be synched to the Freestone learning management catalog. netFORUM courses may include events and publications.

save mode: Update

created: mrehrer_avctr-11/14/2012 9:37:32 AM
updated: dhopkins_avctr-3/9/2016 11:48:59 AM

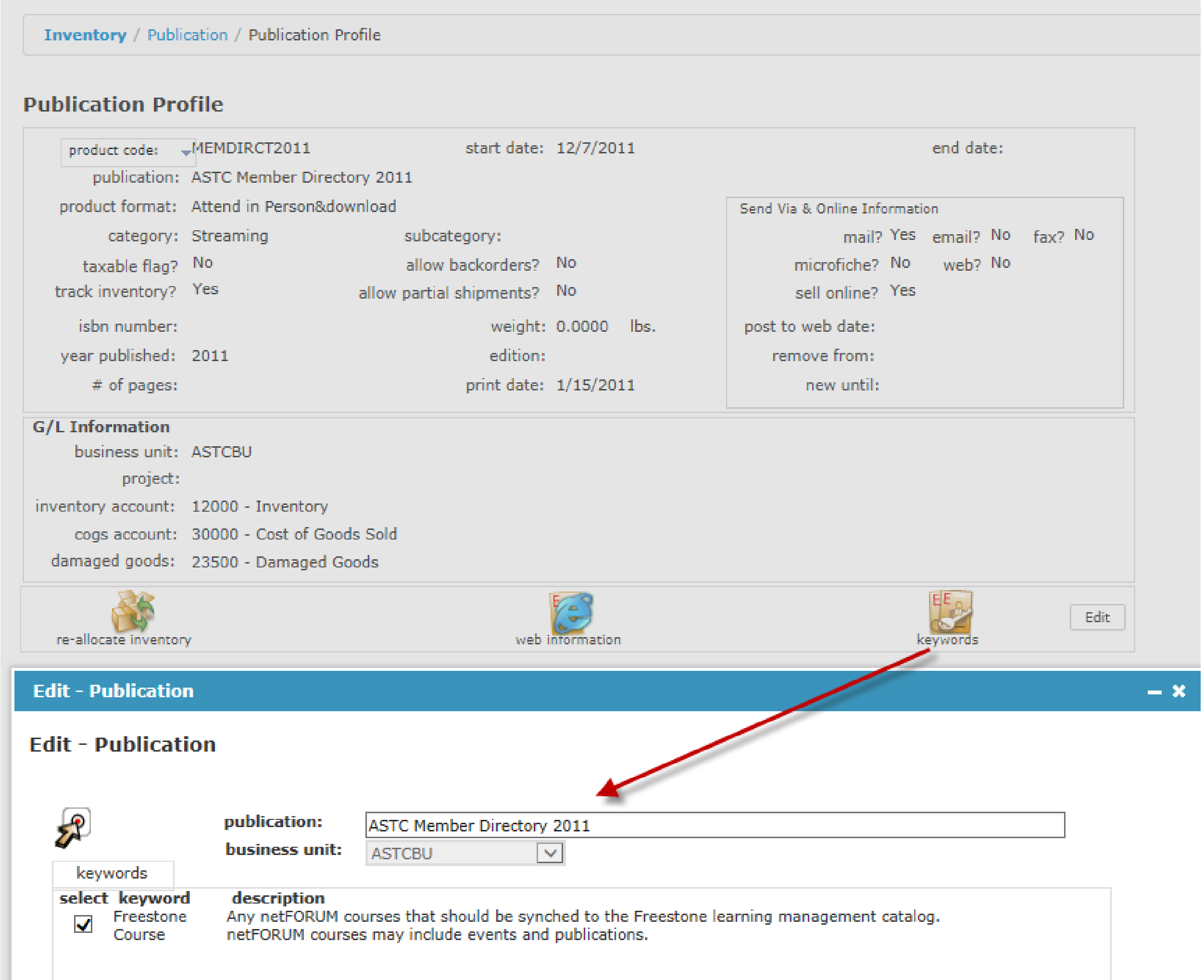
goals
registration: 12000
revenue: $4,000,000.00
attendance
projected: 12000
guaranteed: 8000
capacity: 15000
counts

	main	guest
registered:	0	0
wait list:	0	0

available: 14994
remaining: 14994

Publication Keywords

Setting publication keywords:



Inventory / Publication / Publication Profile

Publication Profile

product code: MEMDIRCT2011 start date: 12/7/2011 end date:

publication: ASTC Member Directory 2011

product format: Attend in Person&download

category: Streaming subcategory:

taxable flag? No allow backorders? No

track inventory? Yes allow partial shipments? No

isbn number: weight: 0.0000 lbs.

year published: 2011 edition:

# of pages: print date: 1/15/2011

Send Via & Online Information

mail? Yes email? No fax? No

microfiche? No web? No

sell online? Yes

post to web date:

remove from:

new until:

G/L Information

business unit: ASTCBU

project:

inventory account: 12000 - Inventory

cogs account: 30000 - Cost of Goods Sold

damaged goods: 23500 - Damaged Goods

Edit - Publication

Edit - Publication

publication: ASTC Member Directory 2011

business unit: ASTCBU

keywords

select	keyword	description
☑	Freestone Course	Any netFORUM courses that should be synched to the Freestone learning management catalog. netFORUM courses may include events and publications.

Freestone Course Keyword Queries

As part of the setup for the catalog sync, two netFORUM **queries** will be added to allow you to easily see all the courses that have the Freestone Course tag. The queries are:

Events → Query Events → Events to sync to Freestone
Inventory → Publication → Publications to sync to Freestone

Run these queries to see which specific events and publications you have enabled to be included in the catalog sync.

Get Changed Courses

The catalog sync returns courses that have been changed on or after a designated datetime. This enables the catalog sync to run on a regular interval and attempt to populate into Freestone only the courses that have changed since the last polling, rather than continuously syncing the entire course catalog.

The changed courses are returned by a web method called GetCoursesByLastUpdatedDate.

Logic for What is Changed

For all course types, they will be included only if the course has a keyword of Freestone Course as described in Keywords.

Events

Events are returned if any of these elements have been added or changed since the supplied as-of-date parameter.

Event (ev_event)
Event Speaker (ev_event_speaker)
Event Faculty (ev_event_faculty)
Individual (co_individual)
Customer (co_customer)
Event Credit (ev_event_credit)
Event Fee (ev_event_fee)
Product related to Event Fee (oe_product)
Price related to Product (oe_price)
Price Attribute related to Price, Related to Product, related to Event Fee (oe_price_attribute)
Freestone Course keyword has been added to the event since the as-of-date parameter.

Note that *deletions* of related records will will *not* trigger an Event as having been changed. For example, if the event previously had 3 speakers, and then you delete one of the three speakers, the event will not be triggered as having been changed.

If you want to force an event like that to look like it has been changed so it will get picked up in the catalog sync, then update the event (for example type an extra character into the description), save the event, edit the event again and take out the extra character, then save it again. Doing so will update the event's change date and thereby make the web service view it as having been changed. Another way to do this is to remove the Freestone Course keyword and then add it back (although this could be a concern if you want to know when you originally added the keyword, as the add_date stamp will get set to the current date).

Note that address changes of an individual speaker do not trigger a change, unless the individual has had a different address designated as their primary address or event speaker address.

Publications

Publications are returned if any of these elements have been added or changed since the supplied as-of-date parameter:

Publication (oe_publication)
Product (oe_product)
Publication/Customer (aka author) affiliation (oe_product_affiliation)
Individual (co_individual)
Customer (co_customer)
Product Credit (ce_product_credit)
Price related to Product/Publication (oe_price)
Price Attribute related to Price, Related to Product/Publication (oe_price_attribute)
Freestone Course keyword has been added to the event since the as-of-date parameter.

Similar to events, deletions of records will not trigger a Publication as having been changed. For tips on how to trigger a changes, see the similar section in the Events section above, except update the publication’s description.

Note that address changes of an individual author do not trigger a change, unless the individual has had a different address designated as their primary address.

GetCoursesByLastUpdatedDate

Request

Using xWeb ExecuteMethod, call the following, setting the AsOfDate parameter as needed:

```
<?xml version="1.0" encoding="utf-8"?>
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns="http://www.avectra.com/2005/">
   <soapenv:Header>
      <ns:AuthorizationToken>
         <ns:Token>******************</ns:Token>
      </ns:AuthorizationToken>
   </soapenv:Header>
   <soapenv:Body>
      <ns:ExecuteMethod>
         <ns:serviceName>Freestone</ns:serviceName>
         <ns:methodName>GetCoursesByLastUpdatedDate</ns:methodName>
         <ns:parameters>
            <ns:Parameter>
               <ns:Name>AsOfDate</ns:Name>
               <ns:Value>01/03/2016 1:05:00.000 PM</ns:Value>
```

```
        </ns:Parameter>
      </ns:parameters>
    </ns:ExecuteMethod>
  </soapenv:Body>
</soapenv:Envelope>
```

Response

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>d792c026-9027-4924-8702-83c5f227cba0</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <Courses xmlns="">
          <Course Type="Event">
            <Key>34F7DF86-6027-4A29-853D-090C4323A871</Key>
          </Course>
          <Course Type="Event">
            <Key>2F5B1AAC-55C3-4166-B151-30AB3710010A</Key>
          </Course>
          <Course Type="Publication">
            <Key>A68CBFC1-3266-46B3-B0CC-3F0CF2BF4666</Key>
          </Course>
          <Course Type="Publication">
            <Key>FFB4CF2F-58E1-4344-A398-763A76A875D1</Key>
          </Course>
          <Course Type="Publication">
            <Key>4B4D4D40-FFDC-44DE-8408-EA25052DA4C2</Key>
          </Course>
        </Courses>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

Observe that within each Course is an attribute “Type” which is either Event or Publication. The value of the <Key> node is the primary key of the Event or Publication. You will pass that value into the other methods as a parameter value for the “key” parameter (see below).

If the Type is Event, then call GetEventInformation. If the Type is Publication then call GetPublicationInformation.

Response - No Courses

If there are no changed courses since the @AsOfDate parameter, then there will be only an empty <Courses /> node:

```
<Courses />
```

GetEventInformation

This method returns all the course information about a single Event.

Request

Sample method to get information about a specific event:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:ns="http://www.avectra.com/2005/">
  <soapenv:Header>
    <ns:AuthorizationToken>
      <ns:Token>******************</ns:Token>
    </ns:AuthorizationToken>
  </soapenv:Header>
  <soapenv:Body>
    <ns:ExecuteMethod>
      <ns:serviceName>Freestone</ns:serviceName>
      <ns:methodName>GetEventInformation</ns:methodName>
      <ns:parameters>
        <ns:Parameter>
          <ns:Name>key</ns:Name>
          <ns:Value>A87AB0E5-BCDC-4923-B440-AF94927351F4</ns:Value>
        </ns:Parameter>
      </ns:parameters>
    </ns:ExecuteMethod>
  </soapenv:Body>
</soapenv:Envelope>
```

Response

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>201657c9-f6ee-4a92-84dc-9effa537446a</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <Courses xmlns="">
          <Course>
            <CourseType>Event</CourseType>
            <CourseKey>3DACD360-6A70-483C-949E-E8AF23A21E37</CourseKey>
            <CourseTitle>The International Pottery Showcase 2015</CourseTitle>
            <CourseStartDateTime>2015-06-18T00:00:00</CourseStartDateTime>
            <CourseHTMLDescription>&lt;img border="0" alt=""
src="/nf2011DemoSPI/iWeb/upload/SPI event.jpg" width="538" height="494"
/></CourseHTMLDescription>
            <LastChangedDate>2016-03-09T11:56:29</LastChangedDate>
            <Speakers>
              <Speaker>
                <SpeakerKey>AE727588-F000-446F-9576-5B68F888DE2E</SpeakerKey>
                <CustomerKey>15B8CF89-9C68-4627-BD50-47D202165622</CustomerKey>
                <FirstName>Susan</FirstName>
                <LastName>Kirk</LastName>
                <Title>Directory of Information Technology</Title>
                <Organization>Dinsmore &amp; Shohl LLP</Organization>
                <Bio>Susan is a leading expert in plastic manufacturing.</Bio>
                <City>Vienna</City>
                <State>VA</State>
                <Country>UNITED STATES</Country>
                <LastChangedDate>2012-11-30T11:21:11</LastChangedDate>
              </Speaker>
              <Speaker>
                <SpeakerKey>7B6EE4ED-A511-498A-89FE-ABDF3E51281C</SpeakerKey>
                <CustomerKey>15B8CF89-9C68-4627-BD50-47D202165622</CustomerKey>
                <FirstName>Susan</FirstName>
                <LastName>Kirk</LastName>
            <Title>Directory of Information Technology</Title>
            <Organization>Dinsmore &amp; Shohl LLP</Organization>
            <Bio>Susan is a leading expert in plastic manufacturing.</Bio>
            <City>Vienna</City>
            <State>VA</State>
            <Country>UNITED STATES</Country>
            <LastChangedDate>2012-11-30T14:04:55</LastChangedDate>
          </Speaker>
          <Speaker>
            <SpeakerKey>F8EDF705-554F-4E9E-BB51-FB0177203FEC</SpeakerKey>
            <CustomerKey>E821FB68-E90C-40EA-810E-6AACC9FC8F1F</CustomerKey>
            <FirstName>David</FirstName>
            <LastName>Rosemont</LastName>
            <Organization>Bell Company</Organization>
            <City>Dayton</City>
            <State>OH</State>
            <Country>UNITED STATES</Country>
            <LastChangedDate>2012-11-29T11:51:18</LastChangedDate>
          </Speaker>
        </Speakers>
        <Credits>
          <Credit>
            <CreditKey>7EE85268-3EF8-436A-8651-0C2CB803B306</CreditKey>
            <Credits>2.00</Credits>
            <CEUTypeKey>69F3287B-2027-463C-ABCC-B99DDA5EDD0F</CEUTypeKey>
            <CEUType>CEU</CEUType>
            <ProgramKey>8173EAE6-728E-45D6-842E-90105E81ED66</ProgramKey>
            <ProgramCode>CAMSP</ProgramCode>
            <ProgramName>Certified Association Management Systems
Professional</ProgramName>
            <LastChangedDate>2016-02-27T13:21:04</LastChangedDate>
          </Credit>
          <Credit>
            <CreditKey>20D25529-4F9B-4280-968D-41E181C6276D</CreditKey>
            <Credits>5.00</Credits>
            <CEUTypeKey>F6EBA90B-8971-4710-8186-7392674158B3</CEUTypeKey>
            <CEUType>CPE</CEUType>
            <ProgramKey>8173EAE6-728E-45D6-842E-90105E81ED66</ProgramKey>
            <ProgramCode>CAMSP</ProgramCode>
            <ProgramName>Certified Association Management Systems
Professional</ProgramName>
            <LastChangedDate>2016-02-27T13:21:44</LastChangedDate>
          </Credit>
          <Credit>
```

```
                <CreditKey>93431661-2131-4244-A19B-9DDEA2427E81</CreditKey>
                <Credits>1.50</Credits>
                <CEUTypeKey>69F3287B-2027-463C-ABCC-B99DDA5EDD0F</CEUTypeKey>
                <CEUType>CEU</CEUType>
                <ProgramKey>8173EAE6-728E-45D6-842E-90105E81ED66</ProgramKey>
                <ProgramCode>CAMSP</ProgramCode>
                <ProgramName>Certified Association Management Systems
Professional</ProgramName>
                <LastChangedDate>2016-02-27T13:20:49</LastChangedDate>
              </Credit>
              <Credit>
                <CreditKey>E97E60CF-534C-4F3A-B157-F67A9C3113D8</CreditKey>
                <Credits>3.00</Credits>
                <CEUTypeKey>F6EBA90B-8971-4710-8186-7392674158B3</CEUTypeKey>
                <CEUType>CPE</CEUType>
                <ProgramKey>8173EAE6-728E-45D6-842E-90105E81ED66</ProgramKey>
                <ProgramCode>CAMSP</ProgramCode>
                <ProgramName>Certified Association Management Systems
Professional</ProgramName>
                <LastChangedDate>2016-02-27T13:21:14</LastChangedDate>
              </Credit>
            </Credits>
            <Fees>
              <Fee>
                <FeeKey>9101C37D-CE17-4769-9016-241C34E76403</FeeKey>
                <ProductCode>NPE2015</ProductCode>
                <ProductName>NPE 2015 Expo Pass</ProductName>
                <FeeCategory>Streaming</FeeCategory>
                <LastChangedDate>2012-11-29T11:12:15</LastChangedDate>
                <Prices>
                  <Price>
                    <PriceKey>BDAED113-D631-4607-85D7-05DEBDB0DDF1</PriceKey>
                    <PriceCode>NPE2015(SM)</PriceCode>
                    <UnitPrice>75.0000</UnitPrice>
                    <MemberFlag>1</MemberFlag>
                    <FeeClass>standard</FeeClass>
                    <LastChangedDate>2012-11-29T11:12:37</LastChangedDate>
                  </Price>
                  <Price>
                    <PriceKey>2F37D34E-1639-413E-81CB-50574B659E96</PriceKey>
                    <PriceCode>NPE2015(EM)</PriceCode>
                    <UnitPrice>60.0000</UnitPrice>
                    <MemberFlag>1</MemberFlag>
                    <FeeClass>early</FeeClass>
```

```
      <LastChangedDate>2012-11-29T11:12:46</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>8AB6EAEE-1091-46F3-87D7-C901EC950806</PriceKey>
      <PriceCode>NPE2015(SN)</PriceCode>
      <UnitPrice>120.0000</UnitPrice>
      <MemberFlag>0</MemberFlag>
      <FeeClass>standard</FeeClass>
      <LastChangedDate>2012-11-29T11:12:55</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>8873B8CB-ECFA-411C-B49F-CD2B8CBB3C7D</PriceKey>
      <PriceCode>NPE2015(EN)</PriceCode>
      <UnitPrice>80.0000</UnitPrice>
      <MemberFlag>0</MemberFlag>
      <FeeClass>early</FeeClass>
      <LastChangedDate>2012-11-29T11:13:03</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>373BAC9D-21BE-4EE3-9841-E58CC7504E50</PriceKey>
      <PriceCode>NPE2015_comp</PriceCode>
      <UnitPrice>0.0000</UnitPrice>
      <MemberFlag>0</MemberFlag>
      <LastChangedDate>2012-11-29T13:43:56</LastChangedDate>
    </Price>
  </Prices>
</Fee>
<Fee>
  <FeeKey>477E1426-38E5-4CAF-BD11-36D727D2ECF9</FeeKey>
  <ProductCode>NPE2015</ProductCode>
  <ProductName>ANTEC@NPE 2015 - Includes Expo Pass</ProductName>
  <FeeCategory>Discounted</FeeCategory>
  <LastChangedDate>2012-11-29T11:20:36</LastChangedDate>
  <Prices>
    <Price>
      <PriceKey>E22066B5-885D-4905-B210-55AB40056577</PriceKey>
      <PriceCode>NPE2015</PriceCode>
      <UnitPrice>675.0000</UnitPrice>
      <MemberFlag>1</MemberFlag>
      <FeeClass>early</FeeClass>
      <LastChangedDate>2012-11-29T11:22:10</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>2203FC1C-0D4C-41C9-99CC-63FD33615658</PriceKey>
      <PriceCode>NPE2015comp</PriceCode>
      <UnitPrice>0.0000</UnitPrice>
      <MemberFlag>0</MemberFlag>
      <LastChangedDate>2012-11-29T11:22:18</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>CA1505D8-0895-4246-A25F-907C7EEDA333</PriceKey>
      <PriceCode>NPE2015</PriceCode>
      <UnitPrice>825.0000</UnitPrice>
      <MemberFlag>1</MemberFlag>
      <FeeClass>standard</FeeClass>
      <LastChangedDate>2012-11-29T11:24:36</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>B3E8119E-7CA0-41F1-B3BF-A77A20858F76</PriceKey>
      <PriceCode>NPE2015</PriceCode>
      <UnitPrice>875.0000</UnitPrice>
      <MemberFlag>0</MemberFlag>
      <FeeClass>early</FeeClass>
      <LastChangedDate>2012-11-29T11:23:00</LastChangedDate>
    </Price>
    <Price>
      <PriceKey>0CA95118-819A-40F3-A625-FAD9F07A2A63</PriceKey>
      <PriceCode>NPE2015</PriceCode>
      <UnitPrice>1025.0000</UnitPrice>
      <MemberFlag>0</MemberFlag>
      <FeeClass>standard</FeeClass>
      <LastChangedDate>2012-11-29T11:25:07</LastChangedDate>
    </Price>
  </Prices>
</Fee>
<Fee>
  <FeeKey>A713168E-4D96-4C1B-8AEE-742463EF9463</FeeKey>
  <ProductCode>NPE2015</ProductCode>
  <ProductName>Business of Plastics - Includes Expo Pass</ProductName>
  <LastChangedDate>2012-11-29T11:15:26</LastChangedDate>
  <Prices>
    <Price>
      <PriceKey>75A29983-C561-4A18-AE27-114735ECB621</PriceKey>
      <PriceCode>NPE2015</PriceCode>
      <UnitPrice>100.0000</UnitPrice>
      <MemberFlag>1</MemberFlag>
      <FeeClass>standard</FeeClass>
      <LastChangedDate>2012-11-29T11:18:20</LastChangedDate>
```

```
                  </Price>
                  <Price>
                    <PriceKey>AAFC07F4-873C-41CC-B7FA-2AB3C260E89D</PriceKey>
                    <PriceCode>NPE2015</PriceCode>
                    <UnitPrice>100.0000</UnitPrice>
                    <MemberFlag>0</MemberFlag>
                    <FeeClass>early</FeeClass>
                    <LastChangedDate>2012-11-29T11:17:44</LastChangedDate>
                  </Price>
                  <Price>
                    <PriceKey>7F06A4BC-94C7-4522-9ED8-320D3526EB1F</PriceKey>
                    <PriceCode>NPE2015</PriceCode>
                    <UnitPrice>75.0000</UnitPrice>
                    <MemberFlag>1</MemberFlag>
                    <FeeClass>early</FeeClass>
                    <LastChangedDate>2012-11-29T11:16:55</LastChangedDate>
                  </Price>
                  <Price>
                    <PriceKey>370A3D0B-D70A-4720-87A4-BBF6B333C503</PriceKey>
                    <PriceCode>NPE2015Comp</PriceCode>
                    <UnitPrice>0.0000</UnitPrice>
                    <MemberFlag>0</MemberFlag>
                    <LastChangedDate>2012-11-29T11:39:33</LastChangedDate>
                  </Price>
                  <Price>
                    <PriceKey>2D1A9253-3A65-49B7-AA4B-EC1B462DC6BA</PriceKey>
                    <PriceCode>NPE2015</PriceCode>
                    <UnitPrice>0.0000</UnitPrice>
                    <MemberFlag>0</MemberFlag>
                    <FeeClass>standard</FeeClass>
                    <LastChangedDate>2012-11-29T11:18:53</LastChangedDate>
                  </Price>
                </Prices>
              </Fee>
            </Fees>
          </Course>
        </Courses>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

GetPublicationInformation

Call this method the same as GetEventInformation, except for the “methodName” parameter. The schema of the output will be the same, only it will be data for a publication instead of an event.

Note that certain event-specific properties will be excluded from this response. Otherwise, the response to this method has the same schema as the response of GetEventInformation

Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns="http://www.avectra.com/2005/">
  <soapenv:Header>
    <ns:AuthorizationToken>
      <ns:Token>*************************</ns:Token>
    </ns:AuthorizationToken>
  </soapenv:Header>
  <soapenv:Body>
    <ns:ExecuteMethod>
      <ns:serviceName>Freestone</ns:serviceName>
      <ns:methodName>GetPublicationInformation</ns:methodName>
      <ns:parameters>
        <ns:Parameter>
          <ns:Name>key</ns:Name>
          <ns:Value>41322DE3-324A-40D4-818E-21DC9718A6E3</ns:Value>
        </ns:Parameter>
      </ns:parameters>
    </ns:ExecuteMethod>
  </soapenv:Body>
</soapenv:Envelope>
```

Response

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>0f342cd5-0e76-4e51-bbaa-9887951d4c2d</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
  <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
    <ExecuteMethodResult>
      <Courses xmlns="">
        <Course>
          <CourseType>Publication</CourseType>
          <CourseKey>41322DE3-324A-40D4-818E-21DC9718A6E3</CourseKey>
          <CourseTitle>ASTC Member Directory 2011</CourseTitle>
          <CourseStartDateTime>2015-06-18T00:00:00</CourseStartDateTime>
          <CourseDescription>Complete listing of all members and officers of
ASTC</CourseDescription>
          <LastChangedDate>2016-02-04T15:24:18</LastChangedDate>
          <Speakers>
            <Speaker>
              <SpeakerKey>7F2BFA4E-8F01-4BF7-BEBB-58383FE6975C</SpeakerKey>
              <CustomerKey>2AAE1732-8A97-47DD-B19F-777121FCE9B0</CustomerKey>
              <Prefix>Mr.</Prefix>
              <FirstName>Edward</FirstName>
              <MiddleName>C</MiddleName>
              <LastName>Hopkins</LastName>
              <Suffix>IV</Suffix>
              <Designation>MD</Designation>
              <Title>Consultant</Title>
              <Organization>Hopkins Company</Organization>
              <Bio>Bio from Individual (not speaker). Cum sociis natoque penatibus et magnis
dis parturient montes, nascetur ridiculus mus. Ut sagittis metus id felis facilisis, vitae iaculis nibh
euismod. Nam sodales odio et turpis varius vestibulum et quis dolor. Duis vehicula lobortis
euismod. Quisque vitae congue enim. Aliquam luctus dolor arcu, et accumsan ex fringilla vitae.
Fusce pharetra tortor eu laoreet tempus. Donec in condimentum magna. Nam auctor, sapien
non pellentesque molestie, lacus ipsum volutpat sem, vitae ultricies sem lorem vitae ex. Sed
laoreet eu arcu sed vehicula.</Bio>
              <City>Milltown</City>
              <State>NJ</State>
              <LastChangedDate>2016-01-29T19:30:50</LastChangedDate>
            </Speaker>
          </Speakers>
          <Credits>
            <Credit>
              <CreditKey>42B87D4B-076A-4505-9302-1132D388561D</CreditKey>
              <Credits>3.00</Credits>
              <CEUTypeKey>69F3287B-2027-463C-ABCC-B99DDA5EDD0F</CEUTypeKey>
              <CEUType>CEU</CEUType>
              <ProgramKey>8173EAE6-728E-45D6-842E-90105E81ED66</ProgramKey>
              <ProgramCode>CAMSP</ProgramCode>
```

```
                <ProgramName>Certified Association Management Systems Professional</ProgramName>
                <LastChangedDate>2016-01-29T19:38:40</LastChangedDate>
              </Credit>
            </Credits>
            <Fees>
              <Fee>
                <FeeKey>41322DE3-324A-40D4-818E-21DC9718A6E3</FeeKey>
                <ProductCode>MEMDIRCT2011</ProductCode>
                <ProductName>ASTC Member Directory 2011</ProductName>
                <FeeCategory>Attend in Person&amp;download</FeeCategory>
                <LastChangedDate>2016-02-04T15:24:18</LastChangedDate>
                <Prices>
                  <Price>
                    <PriceKey>7E1372A3-E735-4421-B99C-0CF3CC2257F0</PriceKey>
                    <PriceCode>MEMDIRCT2011-NM</PriceCode>
                    <UnitPrice>19.9500</UnitPrice>
                    <MemberFlag>0</MemberFlag>
                    <FeeClass>standard</FeeClass>
                    <LastChangedDate>2016-02-04T15:33:00</LastChangedDate>
                  </Price>
                  <Price>
                    <PriceKey>EC4ABEC0-A176-446F-81AE-8B1A439F3164</PriceKey>
                    <PriceCode>MEMDIRCT2011-MA</PriceCode>
                    <UnitPrice>7.9500</UnitPrice>
                    <MemberFlag>1</MemberFlag>
                    <MemberType>Professional</MemberType>
                    <FeeClass>standard</FeeClass>
                    <LastChangedDate>2016-02-04T15:45:32</LastChangedDate>
                  </Price>
                  <Price>
                    <PriceKey>0F775987-CF15-4C03-8900-A0189996C368</PriceKey>
                    <PriceCode>MEMDIRCT2011</PriceCode>
                    <UnitPrice>9.9500</UnitPrice>
                    <MemberFlag>1</MemberFlag>
                    <FeeClass>standard</FeeClass>
                    <LastChangedDate>2011-12-07T16:02:44</LastChangedDate>
                  </Price>
                </Prices>
              </Fee>
            </Fees>
          </Course>
        </Courses>
      </ExecuteMethodResult>
```

```
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

GetRevokedCourseOrders

Contains any course orders that have been revoked within the date range provided by the startDate and endDate parameters. Revoked means that at one time the order was active and valid, but no longer is because of one of the following reasons, indicated by a RevokeCode property in the response. Note that in some case, a single order might appear two or more times with different RevokeCodes. See list of RevokeCode values below.

Parameters

Name	Type	Required	Notes
dateFrom	DateTime	Yes	Filters based on RevokeDate
dateThrough	DateTime	Yes	Filters based on RevokeDate

Response Fields

Note that in many cases, the value of a property depends on whether the CoureType is Event or Publication.

Name	Data Type	May be Omitted	Description
RecordKey	Uniqueidentifier	Yes	If CourseType is Event, then this is the Registrant Key (reg_key). If CourseType is Publication, then it is the invoice detail key (ivd_key).
CourseType	String	No	Event or Publication
InvoiceCode	String	Yes	Invoice Code, if exists
InvoiceDetailKey	Uniqueidentifier	Yes	Invoice Detail Key, if exists (ivd_key)
RevokeCode	String (3 digits)	No	See RevokeCode
RevokeType	String	No	See RevokeCode
CustomerKey	Uniqueidentifier	No	The customer key
CustomerID	Integer	No	The integer customer record number (cst_recno)
CourseKey	Uniqueidentifier	No	If Event, then the event key (evt_key). If Publication,

			then the product key (prd_key)
CourseCode	String	Yes	If Event, then Event Code (evt_code) which is nullable; if Publication then Product Code (prd_code) which is nullable
CourseTitle	String	No	If Event then Event Title. If Publication then Product Title
PriceKey	Uniqueidentifier	Yes	Price Key if available
PriceCode	String	Yes	Price Code if available

RevokeCode

RevokeCode	**RevokeType**	**CourseType**	**Explanation**
101	Voided event registration	Event	A non-closed Invoice was voided from the Invoice page
102	Cancelled event registration with accounting	Event	Registration was cancelled and has accounting data
103	Cancelled free event registration	Event	A registration has been cancelled and has no accounting data. This occurs for free event registrations.
104	Cancelled publication with return	Publication	A publication has been cancelled/returned
105	Voided publication	Publication	Void of non-closed invoice
106	Voided with adjustment event registration	Event	Void with adjustment of a closed invoice
107	Voided with adjustment event registration	Publication	Void with adjustment of a closed invoice
108	Event registration soft deleted	Event	Event registration has been soft-deleted

Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns="http://www.avectra.com/2005/">
  <soapenv:Header>
    <ns:AuthorizationToken>
      <ns:Token>*********************</ns:Token>
    </ns:AuthorizationToken>
  </soapenv:Header>
  <soapenv:Body>
```

```
    <ns:ExecuteMethod>
      <ns:serviceName>Freestone</ns:serviceName>
      <ns:methodName>GetRevokedCourseOrders</ns:methodName>
      <ns:parameters>
        <ns:Parameter>
          <ns:Name>dateFrom</ns:Name>
          <ns:Value>02/01/2018</ns:Value>
        </ns:Parameter>
        <ns:Parameter>
          <ns:Name>dateThrough</ns:Name>
          <ns:Value>03/01/2018</ns:Value>
        </ns:Parameter>
      </ns:parameters>
    </ns:ExecuteMethod>
  </soapenv:Body>
</soapenv:Envelope>
```

Response

Observe that the response contains an XML code comment to assist developers. Not every ResponeCode is included in this sample.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>5d0a845a-0b37-44b1-82a4-3018a9229f9b</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <RevokedOrders xmlns="">
          <!--Returns a list of revoked (returned or voided) course orders in a date range
(dateFrom to dateThrough).
It is possible that some orders might be included more than once, with different RevokeCode
values.
Parameters: dateFrom - will be set to 00:00:00.000 of the date provided. dateThrough: will be
set to 23:59:59.997 of the date provided.
RecordKey - reg_key for event, ivd_key for pub; reg_key can be null for certain kinds of voids.
CourseType - Event or Publication.
RevokeCode - used for diagnostics, for the type of revocation.
```

```
RevokeType - for informational purposes, explains how the order was revoked in netFORUM.
CustomerID - integer ID of the customer (cst_recno).
CourseCode - evt_code for events, prd_code for publications. Warning: can be NULL.
CourseTitle - evt_title for events, prd_title for pubs.
PriceCode - Warning, can be NULL.-->
          <Order>
            <CourseType>Event</CourseType>
            <InvoiceCode>253932</InvoiceCode>
            <InvoiceDetailKey>6BA4B054-5603-4DFF-99B0-8FC77C3E0A26</InvoiceDetailKey>
            <RevokeDate>2018-02-20T11:43:04</RevokeDate>
            <RevokeCode>101</RevokeCode>
            <RevokeType>Voided event registration</RevokeType>
            <CustomerKey>547FAB08-337E-47F9-BB9B-00378CB954FE</CustomerKey>
            <CustomerID>89031</CustomerID>
            <CourseKey>28169602-ED13-477E-B910-29EE22D40A60</CourseKey>
            <CourseCode>NEvtdWU2lA</CourseCode>
            <CourseTitle>Newest EventdWU2lA</CourseTitle>
            <PriceKey>7FE3945B-8216-4790-9445-A7E6575F3C25</PriceKey>
            <PriceCode>NEvtdWU2lA</PriceCode>
          </Order>
          <Order>
            <RecordKey>6D247C08-2007-44DB-9A16-009A0A5C3CF9</RecordKey>
            <CourseType>Event</CourseType>
            <InvoiceCode>253921</InvoiceCode>
            <InvoiceDetailKey>8C0BCA99-9C4D-4FC7-B3A1-B36AA817FF50</InvoiceDetailKey>
            <RevokeDate>2018-02-15T13:38:58</RevokeDate>
            <RevokeCode>102</RevokeCode>
            <RevokeType>Cancelled event registration with accounting</RevokeType>
            <CustomerKey>050750BF-0470-4913-B880-9D5B58565524</CustomerKey>
            <CustomerID>168114</CustomerID>
            <CourseKey>9E4C130C-4D36-4800-AE5E-FD97B2DF47FA</CourseKey>
            <CourseCode>M-Zaga Ev</CourseCode>
            <CourseTitle>M-Zaga Event</CourseTitle>
            <PriceKey>146D3A0F-BF5A-4277-92C8-1176AFED14DE</PriceKey>
            <PriceCode>M-Zaga Ev</PriceCode>
          </Order>
          <Order>
            <CourseType>Event</CourseType>
            <InvoiceCode>253941</InvoiceCode>
            <InvoiceDetailKey>BD7099F9-DEB3-47AE-B16B-FA2B0B43E57D</InvoiceDetailKey>
            <RevokeDate>2018-02-20T15:34:37</RevokeDate>
          <RevokeCode>106</RevokeCode>
          <RevokeType>Voided wth adjustment event registration</RevokeType>
          <CustomerKey>723AD8C4-AA3E-4E08-9573-984C6AC849EB</CustomerKey>
          <CustomerID>111021</CustomerID>
          <CourseKey>F7BE4CB9-1C25-4BFA-9E26-BFEF8FC94089</CourseKey>
          <CourseCode>NEvt13fe5D</CourseCode>
          <CourseTitle>Newest Event13fe5D</CourseTitle>
          <PriceKey>0E0DA57C-5812-4E32-BB2B-0DE2A393F98A</PriceKey>
          <PriceCode>NEvt13fe5D</PriceCode>
        </Order>
        <Order>
          <RecordKey>A3C5747A-AA2C-48ED-866E-24E6A4933C06</RecordKey>
          <CourseType>Publication</CourseType>
          <InvoiceCode>253936</InvoiceCode>
          <InvoiceDetailKey>A3C5747A-AA2C-48ED-866E-
24E6A4933C06</InvoiceDetailKey>
          <RevokeDate>2018-02-20T14:14:50</RevokeDate>
          <RevokeCode>104</RevokeCode>
          <RevokeType>Cancelled publication with return</RevokeType>
          <CustomerKey>5E0CB4D6-86C0-45D4-8E87-4A98BAAAECBE</CustomerKey>
          <CustomerID>168048</CustomerID>
          <CourseKey>BA555A43-B2AF-45E6-8AE5-67DFEFF392A4</CourseKey>
          <CourseCode>pub1</CourseCode>
          <CourseTitle>pub1</CourseTitle>
          <PriceKey>11977F5E-4EF7-4EAF-997D-DBA1EBCD82B0</PriceKey>
          <PriceCode>pub1</PriceCode>
        </Order>
        <Order>
          <RecordKey>2D527AA9-4F4F-4648-84D1-378F414C2079</RecordKey>
          <CourseType>Publication</CourseType>
          <InvoiceCode>253937</InvoiceCode>
          <InvoiceDetailKey>2D527AA9-4F4F-4648-84D1-378F414C2079</InvoiceDetailKey>
          <RevokeDate>2018-02-20T14:18:33</RevokeDate>
          <RevokeCode>105</RevokeCode>
          <RevokeType>Voided publication</RevokeType>
          <CustomerKey>5E0CB4D6-86C0-45D4-8E87-4A98BAAAECBE</CustomerKey>
          <CustomerID>168048</CustomerID>
          <CourseKey>DBC0E163-7EE2-47B7-A419-D7230A47E1EF</CourseKey>
          <CourseCode>pub-1</CourseCode>
          <CourseTitle>pub-1</CourseTitle>
          <PriceKey>B285086C-6B31-4EDA-A779-AE89D1C1075B</PriceKey>
          <PriceCode>pub-1</PriceCode>
        </Order>
        <Order>
```

```
            <RecordKey>F9FEB8CC-A0EE-45C2-93D6-464B9AE8837F</RecordKey>
            <CourseType>Publication</CourseType>
            <InvoiceCode>253938</InvoiceCode>
            <InvoiceDetailKey>F9FEB8CC-A0EE-45C2-93D6-
464B9AE8837F</InvoiceDetailKey>
            <RevokeDate>2018-02-20T14:25:39</RevokeDate>
            <RevokeCode>107</RevokeCode>
            <RevokeType>Voided wth adjustment publication</RevokeType>
            <CustomerKey>5E0CB4D6-86C0-45D4-8E87-4A98BAAAECBE</CustomerKey>
            <CustomerID>168048</CustomerID>
            <CourseKey>DBC0E163-7EE2-47B7-A419-D7230A47E1EF</CourseKey>
            <CourseCode>pub-1</CourseCode>
            <CourseTitle>pub-1</CourseTitle>
            <PriceKey>B285086C-6B31-4EDA-A779-AE89D1C1075B</PriceKey>
            <PriceCode>pub-1</PriceCode>
          </Order>
        </RevokedOrders>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

Empty Response

If there are no records, the response will be like this (xml comments trimmed for brevity):

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>************</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <RevokedOrders xmlns="">
        </RevokedOrders>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

GetEventSubstitutions

Returns a list of event registrant substitutions.

Note that netFORUM can have multiple substitutions for the same event registration. For example: Alice is the original registrant, then she is substituted for by Bob, and then Chris substitutes for Bob. If this happens, there will be two rows in this result. Bob will be listed as a substitute for Alice, and Chris will be listed as a substitute for Bob.

Parameters

If the startDate is provided, then this will filter any substitutions on that date or later.
If the endDate is provided, then this will filter any substitutions on midnight of that date or earlier.
Date is based on the netFORUM system date.

Name	**Type**	**Required**	**Notes**
startDate	DateTime	No	Optional filters on substitution date
endDate	DateTime	No	Optional filter on substitution date
CourseCode	String (10 character max)	No	Optional filter based on Course Code (Event Code evt_code)
CustomerKey	Uniqueidentifier	No	Optional filter on both Substituted For and Substitute Customer

Response Fields

Name	**Data Type**	**May be Omitted**	**Description**
RecordKey	Uniqueidentifier	No	Registrant Key (reg_key)
CourseKey	Uniqueidentifier	No	Event Key (evt_key)
CourseCode	String	Yes	Event Code (evt_code)
InvoiceCode	String	Yes	Invoice Code (reg_inv_code)
SubstitutedForCustomerKey	Uniqueidentifier	No	Customer Key of the registrant who was substituted for (i.e. is no longer going to the event)
SubstitutedForCustomerID	Integer	No	Customer ID
SubstitutedForCustomerSortName	String	No	Customer Sort Name
SubstitutedForCustomerEmail	String	Yes	Customer primary email address
SubstituteCustomerKey	Uniqueidentifier	No	Customer Key of the replacement registrant who is going in place of

			the original registrant (the “SubstitutedFor” customer)
SubstituteCustomerID	Integer	No	Customer ID
SubstituteCustomerSortName	String	No	Customer Sort Name
SubstituteCustomerEmail	string	Yes	Customer primary email address
SubstitutionDate	DateTime	No	The date and time the substitution occurred in netFORUM. The is the actual database log datetime when the substitution was performed. Technically, any associated accounting data might have different transaction dates.

Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns="http://www.avectra.com/2005/">
  <soapenv:Header>
    <ns:AuthorizationToken>
      <ns:Token>***************</ns:Token>
    </ns:AuthorizationToken>
  </soapenv:Header>
  <soapenv:Body>
    <ns:ExecuteMethod>
      <ns:serviceName>Freestone</ns:serviceName>
      <ns:methodName>GetEventSubstitutions</ns:methodName>
      <ns:parameters>
      <!-- all of these parameters are optional and may be excluded or included -->
        <ns:Parameter>
          <ns:Name>startDate</ns:Name>
          <ns:Value>01/01/2015</ns:Value>
        </ns:Parameter>
        <ns:Parameter>
          <ns:Name>endDate</ns:Name>
          <ns:Value>01/01/2019</ns:Value>
        </ns:Parameter>
       <!--
        <ns:Parameter>
          <ns:Name>CourseCode</ns:Name>
          <ns:Value>xfhf_html5</ns:Value>
        </ns:Parameter>
        -->
        <!--
        <ns:Parameter>
          <ns:Name>CustomerKey</ns:Name>
          <ns:Value>38F141F2-B554-4AAE-94DB-89ABA30D8443</ns:Value>
        </ns:Parameter>
        -->
      </ns:parameters>
    </ns:ExecuteMethod>
  </soapenv:Body>
</soapenv:Envelope>
```

Response

Observe that the response contains an XML code comment to assist developers.

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>4e7958c3-7552-4cb3-9bc3-caa6d30f4353</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <EventRegistrantSubstitutes xmlns="">
          <!--Returns a list of registrants who have been substituted for another registrant.
SubstitutedForCustomerKey is the original registrant.
SubstituteCustomerKey is the replacement registrant who is substituting for the original
registrant.
Be aware that there can be multiple chained substitutes, for example Alice is original, then is
substituted for by Bob
and then Chris substitutes for Bob. If this happens, there will be two rows in this result. Bob will
be listed
as a sub for Alice, and Chris will be listed as a sub for Bob.
Caution: CourseCode can be null; CourseTitle should always contain a value.
InvoiceCode might be null for free events.
Parameters: all are optional. Results are filtered by substitution date only if you pass a value to
startDate and/or endDate parameters.
```

```
- startDate (DateTime)
- endDate (DateTime)
- CourseCode (string(10)) - corresponds to ev_event.evt_code-->
          <EventRegistrantSubstitute>
            <RecordKey>904736E1-6757-41BE-8BB6-7D431C6703F6</RecordKey>
            <CourseKey>48040330-C309-48A4-9678-70A4F91AF420</CourseKey>
            <CourseCode>fhf_html5</CourseCode>
            <CourseTitle>html5 best practices</CourseTitle>
            <InvoiceCode>253931</InvoiceCode>
            <SubstitutedForCustomerKey>547FAB08-337E-47F9-BB9B-00378CB954FE</SubstitutedForCustomerKey>
            <SubstitutedForCustomerID>89031</SubstitutedForCustomerID>
            <SubstitutedForCustomerSortName>Hopkins Darryl</SubstitutedForCustomerSortName>
            <SubstitutedForCustomerEmail>darryl.hopkins@abila.comz</SubstitutedForCustomerEmail>
            <SubstituteCustomerKey>D1D383FF-BD8C-4B6D-97D2-14DF68360D54</SubstituteCustomerKey>
            <SubstituteCustomerID>111684</SubstituteCustomerID>
            <SubstituteCustomerSortName>Hopkins Alisa</SubstituteCustomerSortName>
            <SubstituteCustomerEmail>dhopkins@avectra.com</SubstituteCustomerEmail>
            <SubstitutionDate>2018-02-19T16:31:09</SubstitutionDate>
          </EventRegistrantSubstitute>
          <EventRegistrantSubstitute>
            <RecordKey>904736E1-6757-41BE-8BB6-7D431C6703F6</RecordKey>
            <CourseKey>48040330-C309-48A4-9678-70A4F91AF420</CourseKey>
            <CourseCode>fhf_html5</CourseCode>
            <CourseTitle>html5 best practices</CourseTitle>
            <InvoiceCode>253931</InvoiceCode>
            <SubstitutedForCustomerKey>7FCF6576-CFF7-4F76-9B21-91F250DB14C1</SubstitutedForCustomerKey>
            <SubstitutedForCustomerID>110975</SubstitutedForCustomerID>
            <SubstitutedForCustomerSortName>Fix new registration Franz</SubstitutedForCustomerSortName>
            <SubstitutedForCustomerEmail>homer@h.com</SubstitutedForCustomerEmail>
            <SubstituteCustomerKey>547FAB08-337E-47F9-BB9B-00378CB954FE</SubstituteCustomerKey>
            <SubstituteCustomerID>89031</SubstituteCustomerID>
            <SubstituteCustomerSortName>Hopkins Darryl</SubstituteCustomerSortName>
            <SubstituteCustomerEmail>darryl.hopkins@abila.comz</SubstituteCustomerEmail>
            <SubstitutionDate>2018-02-19T16:07:08</SubstitutionDate>
          </EventRegistrantSubstitute>
          <EventRegistrantSubstitute>
            <RecordKey>848C1298-0AFF-4C17-832F-E768BB14242D</RecordKey>
            <CourseKey>1C3DD879-F78B-4518-8C1D-328875EF7CBB</CourseKey>
            <CourseCode>11926</CourseCode>
            <CourseTitle>11926</CourseTitle>
            <InvoiceCode>118878</InvoiceCode>
            <SubstitutedForCustomerKey>DE4163D6-D54F-4AA9-A834-
031D777EA953</SubstitutedForCustomerKey>
            <SubstitutedForCustomerID>109693</SubstitutedForCustomerID>
            <SubstitutedForCustomerSortName>Groetzner
Paul</SubstitutedForCustomerSortName>

<SubstitutedForCustomerEmail>pgroetzner@avectra.com</SubstitutedForCustomerEmail>
            <SubstituteCustomerKey>28F141F2-B554-4AAE-94DB-
89ABA30D8443</SubstituteCustomerKey>
            <SubstituteCustomerID>144527</SubstituteCustomerID>
            <SubstituteCustomerSortName>Fussell Tracy</SubstituteCustomerSortName>
            <SubstituteCustomerEmail>tracy.fussell@gmail.com</SubstituteCustomerEmail>
            <SubstitutionDate>2016-10-07T16:07:47</SubstitutionDate>
          </EventRegistrantSubstitute>        </EventRegistrantSubstitutes>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

Empty Response

If there are no records, the response will be like this (xml comments trimmed for brevity):

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>572abe89-cac6-4002-b44d-bef134d445bd</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <EventRegistrantSubstitutes xmlns="">
        </EventRegistrantSubstitutes>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

GetPurchasedCoursesByCustomer

Returns a list of courses that have been purchased by a specific customer.

Parameters

Name	Type	Required	Notes
CustomerKey	uniqueidentifier	Yes	

Response Fields

Name	Data Type	May be Omitted	Description
CustomerKey (attribute of PurchasedCourses)	uniqueidentifier	No	Echoes the parameter value
InvoiceCode (attribute of Course)	String	Yes	Invoice Code
CourseType (attribute of Course)	String	No	Event or Publication
CourseCode (element of Course)	String	Yes	If Event, then Event Code (evt_code) which is nullable; if Publication then Product Code (prd_code) which is nullable
PriceCode (attribute of Course)	String	Yes	If Event, then this attribute is not returned. If publication, then this is the Price Code (prc_code)

Request

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:ns="http://www.avectra.com/2005/">
  <soapenv:Header>
    <ns:AuthorizationToken>
      <ns:Token>************************</ns:Token>
    </ns:AuthorizationToken>
  </soapenv:Header>
  <soapenv:Body>
    <ns:ExecuteMethod>
      <ns:serviceName>Freestone</ns:serviceName>
      <ns:methodName>GetPurchasedCoursesByCustomer</ns:methodName>
      <ns:parameters>
        <ns:Parameter>
          <ns:Name>CustomerKey</ns:Name>
          <ns:Value>55D38FA8-61D2-42D5-8C8C-0EF2DC7E910C</ns:Value>
        </ns:Parameter>
      </ns:parameters>
    </ns:ExecuteMethod>
  </soapenv:Body>
</soapenv:Envelope>
```

Response

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>067c8ae9-4f67-4b65-a2ca-4a4d05501a9e</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
      <ExecuteMethodResult>
        <PurchasedCourses CustomerKey="55D38FA8-61D2-42D5-8C8C-0EF2DC7E910C" xmlns="">
          <Course>
            <CourseCode InvoiceCode="152897" CourseType="Event">CR12007EO</CourseCode>
          </Course>
          <Course>
            <CourseCode InvoiceCode="132897" CourseType="Event">CR12007ET</CourseCode>
          </Course>
          <Course>
            <CourseCode InvoiceCode="152827"
CourseType="Publication">Publication1</CourseCode>
          </Course>
          <Course>
            <CourseCode InvoiceCode="152829" CourseType="Publication" PriceCode="Pub0234-
MEM">Pub0234</CourseCode>
          </Course>
          <Course>
            <CourseCode InvoiceCode="152886" CourseType="Publication" PriceCode="Pub898-
MEM">Pub898</CourseCode>
          </Course>
        </PurchasedCourses>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

Empty Response

If there are no records for the specified customer, then the response will be like this:

```
<soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
  <soap:Header>
    <AuthorizationToken xmlns="http://www.avectra.com/2005/">
      <Token>6dad802c-7fd4-4d31-869a-04ef5a40bf00</Token>
    </AuthorizationToken>
  </soap:Header>
  <soap:Body>
    <ExecuteMethodResponse xmlns="http://www.avectra.com/2005/">
```

```
      <ExecuteMethodResult>
        <PurchasedCourses CustomerKey="54D38FA8-61D2-42D5-8C8C-0EF2DC7E910C" xmlns=""/>
      </ExecuteMethodResult>
    </ExecuteMethodResponse>
  </soap:Body>
</soap:Envelope>
```

Custom Development Considerations

The sections below explain how to customize the netFORUM web methods. Any such customizations will likely need corresponding custom development in Freestone.

Custom Properties for Events

Potential scenarios:

- A custom integration is required and you need to pass additional properties about Events, Speakers, etc., over to Freestone that go beyond what is included in the baseline sync.

Restrictions/Limitations:

- Schema of response cannot deviate from baseline schema.
- Just because you implement this in Enterprise doesn't mean that Freestone will "know" what to do with the additional properties. You must engage with your Freestone implementation team to build out any customizations in Freestone.
- Format of additional properties is an array of name/value pairs. More elaborate integration techniques may require more advanced customizations outside the scope of this catalog sync methodology.

Benefits:

- In Enterprise, this technique is fairly easy to do and does not take client off upgrade path.
- Does not require any customization to the SPs that return the basic data about a course.

Each web method (GetEventInformation and GetPublicationInformation) runs a different database stored procedure that retrieves the data from netFORUM. Within each node (Event, Fee, Speaker, etc.), there is an opportunity to return additional data about that particular record in an array of one or more name/value pairs.

To do this, you may create a new custom stored procedure that will return a list of one or more name/value pairs for a particular type (Event, Fee, Speaker, etc.), for a particular event and its related data.

When you do this, the GetEventInformation web method will return those extra properties as shown:

```
        <Course>
          <CourseType>Event</CourseType>
          <CourseKey>3DACD360-6A70-483C-949E-E8AF23A21E37</CourseKey>
          <CourseTitle>The International Expo Showcase 2015</CourseTitle>
          <CourseStartDateTime>2016-04-02T00:00:00</CourseStartDateTime>
          <CourseEndDateTime>2016-04-05T00:00:00</CourseEndDateTime>
          <CourseHTMLDescription>&lt;img border="0" alt=""
src="/nf2011Demo/iWeb/upload/event.jpg" width="538" height="494"
/></CourseHTMLDescription>
          <EarlyRegDate>2014-11-01T00:00:00</EarlyRegDate>
          <StandardRegDate>2015-04-05T00:00:00</StandardRegDate>
          <LastChangedDate>2016-01-20T12:09:25</LastChangedDate>
          <CustomCourseProperties>
            <Property>
              <Name>PropertyA</Name>
              <Value>100</Value>
            </Property>
            <Property>
              <Name>PropertyB</Name>
              <Value>false</Value>
            </Property>
          </CustomCourseProperties>
          <Speakers>
          </Speakers>
          <Fees>
          </Fees>
        </Course>
```

The example above shows custom properties in the <Course> node for the event, but you can also return custom properties for any of the other nodes (Speaker, Fee, Price, etc.). The name of the node for each section of custom properties (e.g. Course, Fee, Speaker, etc.) will have a different name, e.g. CustomPriceProperties, CustomCreditProperties, CustomFeeProperties, etc. But within each node, the naming of Property, Name and Value is the same for all.

To return custom properties as shown above, you must create a custom stored procedure, and then add a system option with option name of ‘GetEventInformationXMLCustomPropertySP’ and option value being the name of the custom SP.

Sample custom event property stored procedure

```
create procedure dbo.ABCDE_CustomEventPropertySP
@EventKey uniqueidentifier
as
begin
```

```
    -- EVENTS - custom properties for two different extender fields
    SELECT [t__Key] = evt_key_ext,
        t__Name = 'evt_property1_ext',
        t__value = evt_property1_ext, t__Type = 'Event'
    FROM dbo.ev_event_ext with (nolock)
    WHERE evt_key_ext = @EventKey AND evt_property1_ext IS NOT NULL
    UNION
    select [t__Key] = evt_key_ext,
        t__Name = 'evt_property2_ext',
        t__value = evt_property2_ext, t__Type = 'EventCredit'
    FROM dbo.ev_event_ext with (nolock)  AND evt_property2_ext IS NOT NULL
    WHERE evt_key_ext = @EventKey

    UNION

    -- 'EventSpeaker' custom properties
    -- for EventSpeaker, it is required that the the value of t__Key
    -- be that of a [fac_key] for the custom properties to link up properly

    SELECT
        [t__Key] = fac_key,
        t__Name = 'spk_custom_field_a_ext',
        t__value = spk_custom_field_a_ext,
        t__Type = 'EventSpeaker'
    FROM dbo.ev_event_speaker_ext spk_e with (nolock)
    JOIN dbo.ev_event_speaker with (nolock) ON spk_key = spk_e.spk_key_ext
    JOIN dbo.ev_event_faculty with (nolock) ON fac_key = spk_fac_key
    WHERE fac_evt_key = @EventKey AND spk_custom_field_a_ext is not null

end
go
```

Requirements for Custom Event Properties SP

SP must have a single parameter called @EventKey with uniqueidentifier data type.

SP must return exactly four columns in recordset (not XML) format, in this order:

- t__Key (uniqueidentifier) - the primary key of the specific element (Event, Speaker, Session, etc.) with the custom property and value. See chart below for what this primary key should be for each node
- t__Name (varchar(100)) - the name of the custom property.

- t__Value (nvarchar(max)) - the value of the custom property
- t__Type (varchar) - the Type of the property. See chart below for what values these must be. These must be exactly the chart below; any exceptions will cause an error.

Following this requirement carefully is critical because the base SP will essentially do this:

```
insert into #t__customPublicationProperties (t__Key, t__Name, t__Value, t__Type)
execute YourCustomSP @PrdKey='zzzzzzzzzzzzzzzzz’
```

This is why your SP must have these exact columns returned in that ordinal order.

Logic inside the custom SP: given the value of the @EventKey provided in the parameter, select the custom properties you need to return, for the given event. Be aware that if the particular value you’re trying to get is in a “deeper” table, then you’ll need to work downward to that table and JOIN up to the event, as shown in the same SP above with ev_event_faculty.

If you need to return custom properties for more than one node (represented by the t__Type), then do so with multiple UNION statements.

Be aware that the t__Value property must not be NULL. Therefore, be sure to return records only when there is actually a value. The example above illustrates this by making sure that the extender field values are not null. The practical effect of this is that the custom properties node for some records may have properties but other records might not have any, for example, below are three speakers. The first has 3 custom properties, the second has just 1, and the third has none (note that many of the base fields are clipped out for brevity):

```
<?xml version="1.0" encoding="utf-8"?>
<Speaker>
   <SpeakerKey>AE727588-F000-446F-9576-5B68F888DE2E</SpeakerKey>
   <SpeakerType>KEYNOTE</SpeakerType>
   <CustomerKey>15B8CF89-9C68-4627-BD50-47D202165622</CustomerKey>
   <FirstName>Jeff</FirstName>
   <LastName>Jones</LastName>
   <CustomerSpeakerProperties>
      <Property>
         <Name>fac_field_a_ext</Name>
         <Value>100</Value>
      </Property>
      <Property>
         <Name>fac_field_b_ext</Name>
         <Value>Oak</Value>
      </Property>
      <Property>
         <Name>fac_field_c_flag_ext</Name>
```

```
            <Value>0</Value>
        </Property>
    </CustomerSpeakerProperties>
</Speaker>
<Speaker>
    <SpeakerKey>F8EDF705-554F-4E9E-BB51-FB0177203FEC</SpeakerKey>
    <SpeakerType>GUEST</SpeakerType>
    <CustomerKey>E821FB68-E90C-40EA-810E-6AACC9FC8F1F</CustomerKey>
    <FirstName>David</FirstName>
    <LastName>Rosemont</LastName>
    <CustomerSpeakerProperties>
        <Property>
            <Name>fac_field_b_ext</Name>
            <Value>Maple</Value>
        </Property>
    </CustomerSpeakerProperties>
</Speaker>
<Speaker>
    <SpeakerKey>F8EDF705-554F-4E9E-BB51-FB0177203FEC</SpeakerKey>
    <SpeakerType>GUEST</SpeakerType>
    <CustomerKey>E821FB68-E90C-40EA-810E-6AACC9FC8F1F</CustomerKey>
    <FirstName>David</FirstName>
    <LastName>Rosemont</LastName>
</Speaker>
```

How this all works: the base SP (GetEventInformationXML) will execute your custom SP once. It will pass in the @EventKey to your custom SP. The results from your SP (if any) get stored in a temporary table at the top of the base SP. The base SP references the values from your temporary table to create the custom properties within each node.

Guide to Custom SP

The table below shows the possible t_Type values and what kind of value must be contained in the t__Key value, and the name of the outer node container that the web method will return.

Type	**Value of t__Type**	**Value of t__Key**	**Node Output in Web Method XML Response**
Event	Event	evt_key	CustomCourseProperties
Event	EventSpeaker	fac_key	CustomSpeakerProperties
Event	EventCredit	ece_key	CustomCreditProperties

Event	EventFee	prd_key	CustomFeeProperties
Event	EventFeePrice	prc_key	CustomPriceProperties
Publication	PublicationProduct	prd_key	CustomCourseProperties
Publication	PublicationAffiliation	pra_key	CustomSpeakerProperties
Publication	PublicationCredit	cpp_key	CustomCreditProperties
Publication	PublicationFee	prd_key	CustomFeeProperties
Publication	PublicationPrice	prc_key	CustomPriceProperties

Custom Properties for Publications

Similar to Custom Properties for Events as described in the previous section, only there are different t__Type values for the nodes in the GetPublicationInformationXML SP.

If you wish to add a custom SP to return custom properties, do so as described in the Events section above.

One important difference is that your custom SP must have a @PrdKey parameter instead of an @EventKey parameter. Enter the name of your custom SP (if any) in a new system option you will create called GetPublicationInformationXMLCustomPropertySP.

Custom Logic for Events

It is possible to customize that data that gets returned for an Event by customizing a baseline stored procedure (SP).

Potential scenarios:

- You need to have different logic/data for how baseline fields are populated.
- You need to alter the conditions for when particular records (like speakers) are or are not selected.

Restrictions:

- Schema of any custom response must conform to response of baseline schema
    - netFORUM has no way of *validating* your schema, unfortunately, because the SP simply returns raw XML. You will only know if it breaks if/when Freestone runs into errors parsing the XML. You will just need to make sure that you do not change the external output's overall node hierarchy and element names. [Note: during development, an attempt was made to validate the results of the SP using SQL's XML Schema Collection feature, but this was unsuccessful; XML Schema Collection seems to work better for XML data storage in database tables.]

Benefits:

- As long as you stick to the basic methodology and hierarchy framework of the SP, you can alter the logic of returning Event data without needing any changes in the Freestone side.
- You can combine this technique with the technique of returning custom properties (described in section above) for even more advanced customizations.

Disadvantages:

- Client will have a custom version of a baseline SP, which introduces maintenance problems.

The data returned for an event in the GetEventInformation web method is generated by a database stored procedure (SP) called GetEventInformationXML. If needed, you can apply custom logic by developing a custom version of this SP. Copy the base SP as a starting point. **The custom SP *must* return the same schema as the base SP**. The Freestone integration expects and requires that the results of this web method to have a consistent for schema for all clients. We recommend not altering the base SP as it is liable to be overwritten should the base logic be altered in the future.

Enter the name of the custom SP into a system option called **GetEventInformationXMLCustomSP**. You must add this system option. Should there be a value in this system option, when the base SP runs, it will check the system option and run your custom SP inside the base SP, and then exit the base SP (this is a common methodology for many baseline netFORUM SPs).

Client is responsible for keeping this SP (as well as any other custom overrides to base SPs) up to date if the base SP should change in the future. We recommend adding comments in the SP to explain the specific areas that are customized. This will help in the future when you need to reconcile the logic in the custom SP with future versions of the baseline SP.

Custom Logic for Publications

Similar to “Custom Logic for Events” as described above. For publications, the base SP is called GetPublicationInformationXML and the system option where you would add the name of the custom override SP is GetPublicationInformationXMLCustomSP.

Custom Logic for Changed Courses

Similar to “Custom Logic for Events” as described above. To retrieve a list of publications and events that have been changed as of a particular datetime, the base SP is called GetCoursesByLastUpdatedDateXML and the system option where you would add the name of the custom override SP is **GetCoursesByLastUpdatedDateXMLCustomSP**.

Additional Course Type

The default catalog sync includes netFORUM Events and Publications. If another netFORUM entity needs to be included, then the following approach is recommended:

Include an extra “section” in the GetCoursesByLastUpdatedDate, with a different “Type”.
Add a new web method that returns course information about this additional Type. That web method will run a XML SP, and that SP must return the same schema as the two base SPs.

Freestone will need to be altered to handle this additional logic.