USPS Pricing Engine SDK

December 4, 2015.

Summary

This is the Domestic and International Pricing Engine SDK (version 11.3.0.0) for the January 2016 Release. The following is a list of Enhancements included in this release.

Note: the database names will be updated for the next release.

Updated version number and sign all DLLs

All the libraries have been update to version 11.3.0.0 and re-signed.

Domestic Pricing Engine

BNS 426 – PM MEPT Change Price Values

Change prices in existing price cells in all classes of mail for Competitive

BNS 339 – Eliminate Priority Mail Express Flat Rate Box

Priority Mail Express Flat Rate Box has been turned off for the following customer maps:

008B3	Click-N-Ship	Commercial Base	CNS
009B6	Click-N-Ship for Business	Commercial Base	Permit Imprint
009P6	Click-N-Ship for Business	Commercial Plus	Permit Imprint
009B5	Click-N-Ship for Business	Commercial Base	Metered
015B4	EASR	Commercial Base	Postage Stamps
015P4	EASR	Commercial Plus	Postage Stamps
015R4	EASR	Retail	Postage Stamps
011B6	eVS	Commercial Base	Permit Imprint
011P6	eVS	Commercial Plus	Permit Imprint
007B7	PC Postage	Commercial Base	PC Postage
012R4	PASS	Retail	Postage Stamps
018B6	PFSC	Commercial Base	Permit Imprint
004B4	WebTools	Commercial Base	Postage Stamps
004P4	WebTools	Commercial Plus	Postage Stamps
004R4	WebTools	Retail	Postage Stamps
014R4	Postage Price Calculator	Retail	Postage Stamps

BNS 351 – Eliminate Priority Mail Regional Rate Box C

Priority Mail Regional Rate Box C has been turned off for the following customer maps:

008B3	Click-N-Ship	Commercial Base	CNS

009B6	Click-N-Ship for Business	Commercial Base	Permit Imprint
009P6	Click-N-Ship for Business	Commercial Plus	Permit Imprint
009B5	Click-N-Ship for Business	Commercial Base	Metered
015B4	EASR	Commercial Base	Postage Stamps
015P4	EASR	Commercial Plus	Postage Stamps
015R4	EASR	Retail	Postage Stamps
011B6	eVS	Commercial Base	Permit Imprint
011P6	eVS	Commercial Plus	Permit Imprint
007B7	PC Postage	Commercial Base	PC Postage
012R4	PASS	Retail	Postage Stamps
022B6	SBP	Commercial Base	Permit Imprint
022P6	SBP	Commercial Plus	Permit Imprint
004B4	WebTools	Commercial Base	Postage Stamps
004P4	WebTools	Commercial Plus	Postage Stamps
014R4	Postage Price Calculator	Retail	Postage Stamps

BNS 416 – Eliminate Critical Mail

Priority Mail Letter Critical Mail, Priority Mail Letter Critical Mail with Signature, Priority Mail Flat Critical Mail, Priority Mail Flat Critical Mail with Signature, have been turned off for the following customer maps:

012R4	PASS	Retail	Postage Stamps
022P6	SBP	Commercial Plus	Permit Imprint
014R4	Postage Price Calculator	Retail	Postage Stamps

BNS 337 – Eliminate First-Class Package Service CPP Prices

1. First-Class Package Service Commercial Plus Prices will no longer be returned for the following customer maps:

009P6	Click-N-Ship for Business	Commercial Plus	Permit Imprint
015P4	EASR	Commercial Plus	Postage Stamps
011P6	eVS	Commercial Plus	Permit Imprint
022P6	SBP	Commercial Plus	Permit Imprint
004P4	WebTools	Commercial Plus	Postage Stamps

2. First-Class Package Service Commercial Base Prices will now be returned for weights greater than 13 oz. and less than 16 oz.

BNS 341 – Ground Product Strategy and New Name

Renamed the following Mail Services

Mail Service ID	Was	Now
73	Standard Post	USPS Retail Ground™

71	Parcel Select Nonpresort	Parcel Select Ground™

Note: the Mail Service IDs and Group Codes have not been changed

BNS 343 – Eliminate Parcel Select ONDC Presort and NDC Presort
This will have no effect on the SDK systems and is only included to keep SDK databases in sync.

BNS 330 – Eliminate PRS NDC
This will have no effect on the SDK systems and is only included to keep SDK databases in sync.
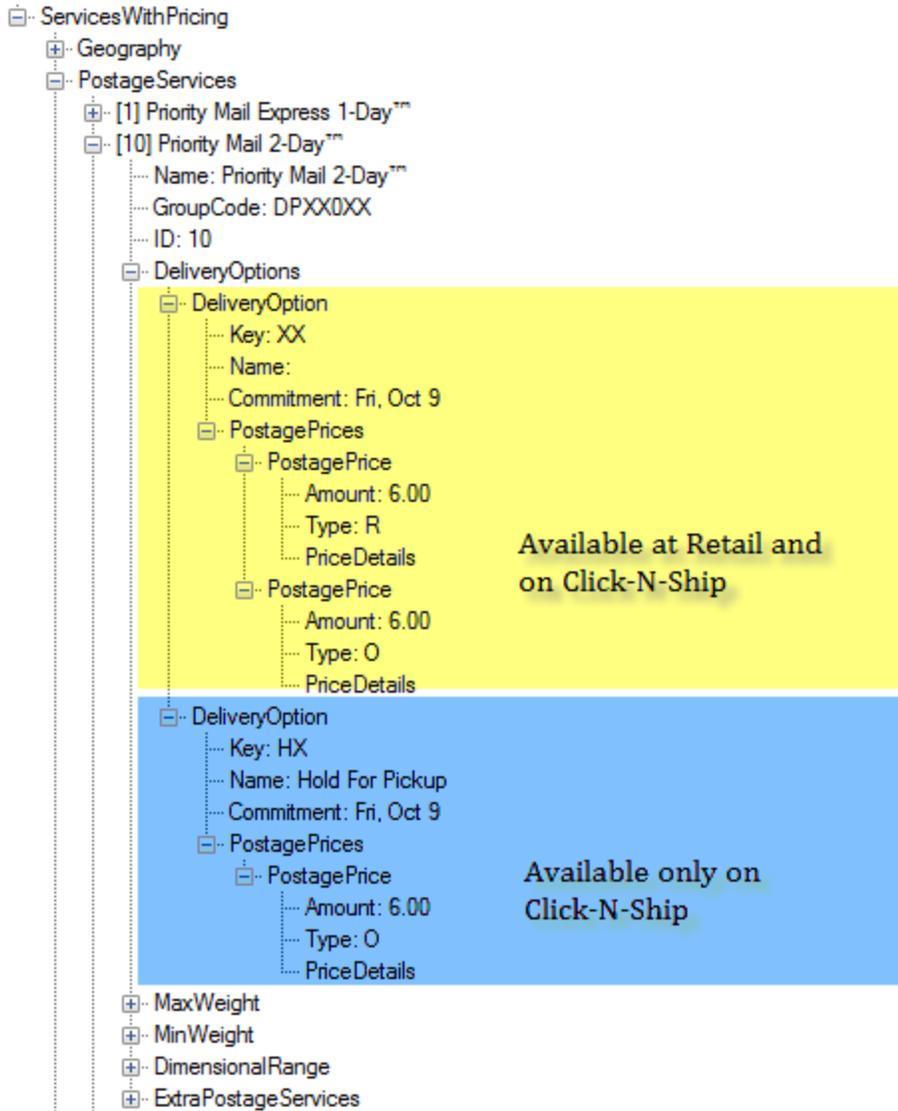
BNS 316 – Click-N-Ship Retail Prices Not Commercial Base
1. A new customer map for Click-N-Ship was added
   Name: 008R3
   The 008R3 customer map matches the 008B3 customer map with the following exceptions
   a. Only retail "R" prices are returned
   b. Regional Rate Box A, B and C are not returned
2. A new customer map for Mobile was added
   a. Name: 023C4
   b. The 023C4 customer map contains pricing for both Retail and Click-N-Ship. The Price Type "R" is used for to indicate that the Mail Service is available at the Retail counter for the Price contained with the same object. The Price Type "O" is used for to indicate that the Mail Service is available at on Click-N-Ship for the Price contained with the same object.

Examples:

```
ServicesWithPricing
    Geography
    PostageServices
        [1] Priority Mail Express 1-Day™
        [10] Priority Mail 2-Day™
            Name: Priority Mail 2-Day™
            GroupCode: DPXX0XX
            ID: 10
            DeliveryOptions
                DeliveryOption
                    Key: XX
                    Name:
                    Commitment: Fri, Oct 9
                    PostagePrices
                        PostagePrice
                            Amount: 6.00
                            Type: R                    Available at Retail and
                            PriceDetails               on Click-N-Ship
                        PostagePrice
                            Amount: 6.00
                            Type: O
                            PriceDetails
                DeliveryOption
                    Key: HX
                    Name: Hold For Pickup
                    Commitment: Fri, Oct 9
                    PostagePrices
                        PostagePrice
                            Amount: 6.00              Available only on
                            Type: O                   Click-N-Ship
                            PriceDetails
            MaxWeight
            MinWeight
            DimensionalRange
            ExtraPostageServices
```

Note: "C" is a new Price Type used only for Calculator Customs Maps.

International Pricing Engine

BNS 426 – PM MEPT Change Price Values
Change prices in existing price cells in all classes of mail for Competitive

BNS 357 – Priority Mail International Insurance Included
1. Priority Mail Express International and Priority Mail International will now return $0.00 for the cost for Insurance when the Declared Value is $200.00 or less.

2. The following new Contain Type has been added to indicate that the mail piece contains only Nonnegotiable Documents. When it is indicated that the mail piece contains only Nonnegotiable Documents the Pricing Engine will not return Insurance as an extra service.

Key	Description
NonnegotiableDocument	The mail piece contains only Nonnegotiable Document(s)

3. The following new Attributes have been added to any Mail Service that allows Insurance.

Key	Description
IncInceNonnegotiableDoc	Included Insurance Nonnegotiable Document
IncInceMerchandise	Included Insurance Merchandise

BNS 377 – Expand PMI & PMEI Rate Group Structure to Regions

The Pricing Engine will return Regional based pricing for Priority Mail Express International Flat Rate and Priority Mail International Flat Rate products.

BNS 380 – New Designated Operator for Bonaire, St. Eustatius, Saba

1. Added a new parent country:

Name	Bonaire, Sint Eustatius, and Saba
Country ID	12318
Code	BQ
Country Number	535

2. Re-parented "Bonaire", "St. Eustatius" and "Saba" to the new country "Bonaire, St. Eustatius, and Saba" with the following changes

County ID	Name	Code	Country Number
10299	Bonaire (Bonaire, Sint Eustatius, and Saba)	BQ	535
10303	Saba (Bonaire, Sint Eustatius, and Saba)	BQ	535
10304	Sint Eustatius (Bonaire, Sint Eustatius, and Saba)	BQ	535

3. Updated Country Regulations for "Curacao"
4. Added Country Regulations for "Bonaire, Sint Eustatius, and Saba"

BNS 453 – Expand Electronic USPS Delivery Confirmation

Added "USPS Delivery Confirmation Electronic" to "Slovak Republic", "Turkey", "Lebanon" and "Norway".

BNS 465 – CNS Pays Retail Prices for PMEI, PMI, GXG, & FCPIS

1. A new customer map for Click-N-Ship was added
   Name: 008R3
   The 008R3 customer map matches the 008B3 customer map with the following exceptions
       a. Only retail "R" prices are returned
2. A new customer map for Mobile was added

a. Name: 023C4
b. The 023C4 customer map contains pricing for both Retail and Click-N-Ship. The Price Type "R" is used for to indicate that the Mail Service is available at the Retail counter for the Price contained with the same object. The Price Type "O" is used for to indicate that the Mail Service is available at on Click-N-Ship for the Price contained with the same object.
c. GXG will not be returned

BNS 466 - Eliminate PMEI Flat Rate Box

Priority Mail Express International Flat Rate Box has been turned off for the following customer maps:

008B3	Click-N-Ship	Commercial Base	CNS
009B5	Click-N-Ship for Business	Commercial Base	Metered
011B6	eVS	Commercial Base	Permit Imprint
011P6	eVS	Commercial Plus	Permit Imprint
007B7	PC Postage	Commercial Base	PC Postage
004B4	WebTools	Commercial Base	Postage Stamps
004P4	WebTools	Commercial Plus	Postage Stamps
004R4	WebTools	Retail	Postage Stamps
014R4	Postage Price Calculator	Retail	Postage Stamps

Domestic and International Pricing Engines

BNS 439 - Visibility for Pharmaceuticals and Critical Shipments

The Domestic and International Pricing Engines have been updated to support the "Pharmaceuticals" and "MedicalSupplies" content types for the eVS customer types (011B6 and 011P6). For the eVS customer types, specifying either "Pharmaceuticals" or "MedicalSupplies" as the content type will result in only the following mail services being returned:

Domestic:
- Priority Mail
- Priority Mail Express
- Frist-Class Mail Parcel
- First-Class Package Service
- Parcel Select

International
- Priority Mail International
- Priority Mail Express International
- First-Class Package International Service

CR 5661 - BNS 439 - Add Pharmaceuticals and MedicalSupplies to MetroPost

Update the Domestic Pricing Engine to support the "Pharmaceuticals" and "MedicalSupplies" content types for the Metro Post customer types (016R4).

BNS 426 - The Pricing Engine will be establishing a new interface to support Discounts, Fees and Surcharges

A new interface has been added to the Domestic and International Pricing Engines to support discount, fees and surcharges pricing.

Method Signature

GetMailingFees(in mailingFeeRequest : MailingFeeRequest) : MailingFee

Description

The method is used to get the Mailing Fee for a specified key. The Mailing Fee Request can contain a list of keys or a single key path with dots "." delimiters. If the full key path is not specified the result will be in the form of a tree with the end of each brunch containing the price, cost, value key, and value limits. If the QueryValue is specified the results will be filtered using the value limits. If the value key of all the result mailing fee matches, the value is applied to calculate the Cost.

Request Key Example:

AddressCorrection.Electronic.FCM

or

AddressCorrection
Electronic
FCM

Query Value Example:

Request:

    QueryValue = 10

    FeeKey = "StampedEnvelopes.PlainStampedEnvelopes.Basic.10.Each"

Results:

    Price = 0.13

    Cost = 1.30

See Appendix A for Code Examples and Test Tool demo

MailingFee Class

Namespace
ManTech.Usps.RateEngine.Business.Entity

Base Class
None

Properties
Cost : decimal
FeeKey : string
Price : decimal
ValueKey : string
ValueKeyLowerLimit : decimal
ValueKeyUpperLimit : decimal

MailingFeeCollection Class

Namespace
ManTech.Usps.RateEngine.Business.Entity

Base Class
List<MailingFee >

Properties
None

MailingFeeRequest Class

Namespace
ManTech.Usps.RateEngine.Business.Entity

Base Class
None

Properties
IDCard : IDCard
FeeKeys : FeeKeyCollection
QueryValue : decimal

MailingFeeRequest .FeeKey Class

Namespace
ManTech.Usps.RateEngine.Business.Entity

Base Class
None

Properties
Value : string

MailingFeeRequest .FeeKeyCollection Class

Namespace
ManTech.Usps.RateEngine.Business.Entity

Base Class
List<MailingFeeRequest .FeeKey>

Properties
None

Impact on Existing Applications

You will not have to rebuild your applications.

Instructions

1. Copy the DLLs
2. Execute SQL scripts in order shown below or execute the batch files

Note: The batch can be executed with a parameter that specifies the database name.

   i.e.: > "Execute Domestic Price Change Updates.bat" "USPS_DOM_2015_JAN_2016"

Contents

Description	File
Folder	Database
Folder	Domestic
SQL Script	BNS 316.sql
SQL Script	BNS 337-1.sql
SQL Script	BNS 337-2.sql
SQL Script	BNS 339.sql
SQL Script	BNS 341-1.sql
SQL Script	BNS 341-2.sql
SQL Script	BNS 351.sql
SQL Script	BNS 416.sql
SQL Script	BNS 343.sql
SQL Script	BNS 330.sql
SQL Script	BNS 426.sql
SQL Script	BNS 439.sql
SQL Script	BNS 426-1.sql
Batch File	Execute Domestic Price Change Updates.bat
Folder	CustomerMaps

SQL Scripts		CreateClient_*
Batch File		Execute Domestic Customer Maps Updates.bat
Folder		International
	SQL Script	BNS 466.sql
	SQL Script	BNS 357.sql
	SQL Script	BNS 377-1.sql
	SQL Script	BNS 377-2.sql
	SQL Script	BNS 380.sql
	SQL Script	BNS 453.sql
	SQL Script	BNS 426-1.sql
	SQL Script	BNS 426.sql
	SQL Script	BNS 426-2.sql
	SQL Script	BNS 377-3.sql
	SQL Script	BNS 439.sql
	SQL Script	BNS 426-3.sql
	SQL Script	Bug 5533.sql
	Batch File	Execute International Price Change Updates.bat
	Folder	CustomerMaps
	SQL Scripts	CreateClient_*
	Batch File	Execute International Customer Maps Updates.bat
Folder		Libraries
	Rate Engine Framework	RateEngine_Framework.dll
	Business Framework	RateEngine_Business.dll
	Domestic Business Rate Engine	RateEngine_DomBusiness.dll
	International Business Rate Engine	RateEngine_IntlBusiness.dll
	Service Delivery Extensions	ServiceDeliveryExtensions.dll
	Customs Forms Engine	CustomsFormsEngine.dll
Folder		Test Tools
	Domestic Business Test Tool	DomBusinessSrvTest.exe
	International Business Test Tool	IntlBusinessSrvTest.exe
	Libraries and Configuration files	*
Design Model		Pricing Engine Design Model.pdf
Release Notes		USPS Pricing Engine SDK 11_3_0_0.pdf

Reported Defects

ID	Title	Status
5331	BNS 316 - CNS Client Mapping 008B3 should return an error	Corrected
5332	BNS 341 - Ground Products Strategy and New Name	Corrected
5466	BNS 426 - PC_MEPT_Change Price Values - Incorrect price for GXG Insurance	Corrected
5550	BNS 377 - PMI Small FRB not showing up for countries in group 6	Corrected
5588	PMEI Padded FRE is not being returned for Tonga	Corrected
5586	BNS 439 - When requesting Pharmaceuticals or MedicalSupplies in the Content tag the Insurance Extra Service is not return	Corrected
5666	BNS 426 - PC_MEPT_Change Price Values - PMI Flat Rate box prices incorrect for DVD and Large Video Flat Rate - Verify correction	Corrected

Bug 5331 - BNS 316 - CNS Client Mapping 008B3 should return an error

Steps to Reproduce

When requesting "GetServicesWith Pricing" using Client Map 008B3, valid responses are returned; expected an exception/error "Customer Type 008B3 is invalid".   Please see email with screen shots from the test tool.

Acceptance Criteria

When requesting information from any Rate Engine method using Client Map 008B3, an exception/error should be returned "Customer Type 008B3 is invalid".

Bug 5332 - BNS 341 - Ground Products Strategy and New Name

Steps to Reproduce

For Parcel Select NPS and Parcel Select Ground the Rate Engine returns "PARCEL SELECT GROUND". This verbiage is put on the label banner. The requirements received from the business state the following should be returned:

- For Parcel Select NPS and Parcel Select Ground
    - o   "USPS PARCEL SELECT GND" should be returned.
- For Standard Post or Retail Ground
    - o   "USPS RETAIL GROUND" should be returned.

_____

J. Salerno 10/20/15 per email from Lizbeth Dobbins dated 10/20/15:

I have already responded to James to let him know there is no conflict. As info for the rest of you on the email stream--

1. Ground is GND on the label for "space" issues. GND is the appropriate abbreviation when there is no room.
2. USPS must be on a shipping label—it doesn't change what we are coding.

3. The marks are in the process of being registered. Legal would not have approved them moving forward if there was an issue.

With the above being stated it was decided the WebTools Team will put the Label Banner Text on the Label as requested by the business. The Rate Engine will send the names as stated in the MLOC along with the TM as follows:

- Renaming Parcel Select Nonpresort as Parcel Select Ground™ (PSG)
- Standard Post as USPS Retail Ground™

Acceptance Criteria
The requirements received from the business state the following should be returned:

- For Parcel Select NPS and Parcel Select Ground
    - "Parcel Select Ground™" should be returned.
- For Standard Post or Retail Ground
    - "USPS Retail Ground™" should be returned.

Bug 5466 - BNS 426 - PC_MEPT_Change Price Values - Incorrect price for GXG Insurance

Steps to Reproduce
The price for GXG insurance 1 to 100 should be 0

Acceptance Criteria
When between $1.00 and $100.00 is enter for GXG insurance the price of 0 is returned.

Bug 5550 - BNS 377 - PMI Small FRB not showing up for countries in group 6
The Priority Mail International® Small Flat Rate Box not available for Australia/New Zealand (Zone 6)

Bug 5588 - PMEI Padded FRE is not being returned for Tonga
Priority Mail Express International™ Padded Flat Rate Envelope not available for Tonga

Bug 5586 - BNS 439 - When requesting Pharmaceuticals or MedicalSupplies in the Content tag the Insurance Extra Service is not return
When requesting Pharmaceuticals or MedicalSupplies in the Content tag the Insurance Extra Service is not return.

Bug 5666 - BNS 426 - PC_MEPT_Change Price Values - PMI Flat Rate box prices incorrect for DVD and Large Video Flat Rate - Verify correction

Steps to Reproduce
1. Navigate to http://ircalc-cat4.usps.com:9080/

2. In the Select a Destination drop-down, select Australia.
3. Enter 0 for the Item's Value.
4. Select the radio button for Package in the Select Shape section.
5. When prompted for Enter Weight, enter 2 pounds.
6. Click on the Continue button.
7. Select Priority Mail International Options to expand the PMI section.
8. You will notice that the the postage price for the PMI DVD Flat Rate priced box and the Large Video Flat Rate priced box is incorrect as the calculator is returning the postage for PMI Envelopes.

Acceptance Criteria

In the reproduction steps, the PMI DVD Flat Rate priced box and the Large Video Flat Rate priced box should report $34.95. This is the price for PMI Flat Rate priced boxes in group 6.

All prices for PMI DVD and Large Video Flat Rate priced boxes should match the PMI Small Flat Rate priced boxes rates for the specified weight and price group.

Appendix A

Mailing Fees Code Example

Example 1

Request

```
MailingFeesRequest mailing_fees_request = new MailingFeesRequest();

// id card

mailing_fees_request.IDCard.CallerID = "14";

mailing_fees_request.IDCard.SourceID = "14";

mailing_fees_request.IDCard.CustomerType = "014R4";

mailing_fees_request.FeeKeys.Add(

    new MailingFeesRequest.FeeKey() { Value = "AddressCorrection" });

mailing_fees_request.FeeKeys.Add(

    new MailingFeesRequest.FeeKey() { Value = "Electronic" });


MailingFee mailing_fee = GetMailingFees(mailing_fees_request);
```

Results

```
□ AddressCorrection
   □ Electronic
      □ FCM
         ─ Price: $0.12
         ─ Cost: $0.12
      □ Other
         ─ Price: $0.32
         ─ Cost: $0.32
```
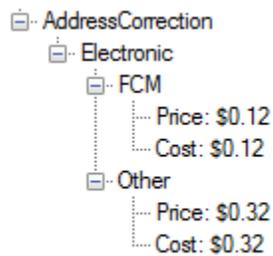
Example 2

Request

```
MailingFeesRequest mailing_fees_request = new MailingFeesRequest();

// id card

mailing_fees_request.IDCard.CallerID = "14";

mailing_fees_request.IDCard.SourceID = "14";

mailing_fees_request.IDCard.CustomerType = "014R4";

mailing_fees_request.FeeKeys.Add(

      new MailingFeesRequest.FeeKey() {

            Value = "AddressCorrection.Electronic.FCM" });


MailingFee mailing_fee = GetMailingFees(mailing_fees_request);
```

Results

```
AddressCorrection
   Electronic
      FCM
         Price: 0.12000
         Cost: 0.12000
```

Example 3

```
MailingFeesRequest mailing_fees_request = new MailingFeesRequest();

// id card

mailing_fees_request.IDCard.CallerID = "14";

mailing_fees_request.IDCard.SourceID = "14";

mailing_fees_request.IDCard.CustomerType = "014R4";

mailing_fees_request.FeeKeys.Add(

        new MailingFeesRequest.FeeKey() { Value = "ParcelAirlift" });

mailing_fees_request.QueryValue = 2;


MailingFee mailing_fee = GetMailingFees(mailing_fees_request);
```

Results

```
ParcelAirlift.0-2Pounds
    Price: $0.75
    Cost: $0.75
    Value Key
        ValueKey: Pounds
        LowerLimit: 0.00000
        UpperLimit: 2.00000
```

Mailing Fees Test Tool Demo

When no fee keys are specified the full tree is returned

A first level Fee Key is specified, only the matching fees are returned

The first and second level Fee Keys are specified, only the matching fees are returned.

The full Fee Key is specified, the single Fee is returned

In this example the specified Fee Key has a range for each Fee returned. The Value Key is used to identify the meaning of the value and the range for each fee.

A Query Value can be entered to narrow the results or the full Fee Key can be specified.

The Query Value in some cases is also used to calculate the Cost

In some cases the Cost is calculated by using the price of different Fee Key

In this example the Cost is the price of the first "250 cards" plus the price of the additional 99 "250 cards" or $83.45 + (99 * $5.20).

PO Box Service Example

Fee Key is:

POBoxService

Fee Key is:

POBOXService

MarketDominant

Fee Key is:

POBOXService

MarketDominant

Size3

Fee Key is:

POBOXService

MarketDominant

Size3

Group4

Fee Key is:

POBOXService

MarketDominant

Size3

Group4

Months6

Fee Key is:

POBOXService

MarketDominant

Size3

Group4

QueryValue is:

6