



USPS Pricing Engine

.NET Software Development Kit (SDK)

Guide to help developers integrate the Pricing Engine SDK into their applications.

3/24/2021

USPS Pricing Engine

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.NET Software Development Kit Overview

This software development kit (SDK) is intended to provide software and Internet developers with the ability to integrate postage rate information into programs and/or web sites.

Licenses and Liability

The information and components contained within this SDK may be distributed only to individuals who have signed the USPS User License and may only be used in accordance with the terms of the USPS User License. The USPS assumes no liability for the incorrect implementation of this SDK once it has been incorporated into a client product. The USPS will supply upgrades to the data and/or the objects when needed, but it assumes no part in distribution of these upgrades once the engine has been integrated into client products.

Purpose

This document will explain the Domestic and International Pricing Engine .NET Interface.

Contact Information

For Technical Support, contact:

Email: RCalcPEPMOSupport@usps.gov

For USPS Support, contact USPS:

Email: PostalExplorer@usps.com

Application Programming Interface (API)

Overview

The Pricing Engine is built using the Model, View, Controller (MVC) design pattern and should be used as a black box. All of the Pricing Engine behavior is provide by making calls to methods that are part of a single interface class named PostOffice.

Working IDs

The Pricing Engine does not enumerate the ID. This was done to allow for greater flexibility. As new services are added the ID of that service only needs to be known to the service itself. The user of the Pricing Engine should not hard code any IDs into their application because services and IDs may change over time. To get the ID of a service, the developer should request the services by specifying to know mail properties and then use the ID of the desired service from the results returned.

Configuration File

To use the .NET SDK, the developer is responsible for creating a configuration file for the application; web.config for web applications and app.config for windows applications. These configuration files must include the following:

Domestic Pricing Engine SDK

Defines the endpoint binding for the Service Delivery Calculator (SDC)

```
<system.serviceModel>
  <bindings>
    <basicHttpBinding>
      <binding name="serviceDeliveryCalculatorSoap11"
        maxReceivedMessageSize="2147483647"
        maxBufferPoolSize="2147483647" >
        <readerQuotas maxArrayLength="2147483647"
          maxStringContentLength="2147483647"/>
        <security mode="Transport">
          <transport clientCredentialType="Certificate" />
        </security>
      </binding>
    </basicHttpBinding>
  </bindings>
  <behaviors>
    <endpointBehaviors>
      <behavior name="endpointCredentialBehavior">
        <clientCredentials>
          <clientCertificate
            storeLocation="LocalMachine"
            storeName="Root"
            x509FindType="FindByThumbprint"
            findValue="8858d68f41053dff6da7a1921c5a4a222f5536f8" />
          </clientCredentials>
        </behavior>
      </endpointBehaviors>
    </behaviors>
  <client>
    <endpoint
```

```

        address=
            "https://sdc1.usps.gov/sdc-services/services/serviceDeliveryCalculator"
        behaviorConfiguration="endpointCredentialBehavior"
        binding="basicHttpBinding"
        bindingConfiguration="serviceDeliveryCalculatorSoap11"
        contract="Domestic.SDC.SDC2Ref.serviceDeliveryCalculator"
        name="serviceDeliveryCalculatorSoap11" />
    </client>
</system.serviceModel>

```

Note: the “endpoint address” needs to be the URL for the SDC webservice.

Defines the database connection string

The database versions configuration element supports the ability to reference different versions of the calculator. The implementation supports a capability to pre-deploy a price change and automatically execute it on the date defined by the “startDate” attribute.

The startDate attribute works in conjunction with the mail properties shippingDate to delineate the database to use. The calculator will default to Now, today’s date, in the absence of a user specified shipping date.

The connection version is used to specify the connection string in the connectionStrings XML node. You can see the version in the connection name, e.g. Domestic.Business.R1701. The engine will determine what connection version to use based upon the start date. Then it will iterate over the connection names to find that version.

The connection version “NAN” is the default connection string. It will be used in the absence of a data source version.

```

<datasourceVersions>
    <add startDate="1/22/2017" connectionVersion="R1701" />
    <add startDate="1/17/2018" connectionVersion="R1801" />
</datasourceVersions>

<connectionStrings>
    <add
        name="Domestic.Business.NAN"
        connectionString="Data Source=SQLSERVICE;Initial Catalog=USPS_DOM_2017_01;Integrated Security=True"
        providerName="RateEngine.Data.SQLDataSource"/>
    <add
        name="Domestic.Business.R1701"
        connectionString="Data Source=SQLSERVICE;Initial Catalog=USPS_DOM_2017_01;Integrated Security=True"
        providerName="RateEngine.Data.SQLDataSource"/>
    <add
        name="Domestic.Business.R1701"
        connectionString="Data Source=SQLSERVICE;Initial Catalog=USPS_DOM_2017_01;Integrated Security=True"
        providerName="RateEngine.Data.SQLDataSource"/>
</connectionStrings>

```

name

The Pricing Engine looks for a connection string named “Domestic.Business.<connectionVersion>”.

connectionString

Used to connect to the database.

providerName

The Pricing Engine uses this value to know underlying data source. Currently the valid values are:

- RateEngine.Data.SQLDataSource – Microsoft SQL Server database
- RateEngine.Data.AccessDataSource – Microsoft Access database

Defines the Application settings

```
<appSettings>
  <add key="ServiceDeliveryCalculator.Available" value="true"/>
  <add key="ServiceDeliveryCalculator.Provider" value="SDC2"/>
  <add key="ServiceDeliveryCalculator.Available.International" value="true"/>
  <add key="ServiceDeliveryCalculator.Provider.International" value="GCW"/>
</appSettings>
```

NOTE: Valid values include KPG and GCW. KPG will tell the engine to use the old Kahala interface. GCW will tell the engine to use the new SDC GCWrapper interface.

International Pricing Engine SDK

Defines the endpoint binding for the Kalaha (KPG) and the GCWrapper (GCW)

```
<system.serviceModel>
  <bindings>
    <basicHttpBinding>
      <!-- Kahala Standard version -->
      <binding name="SOAPInterfaceSoapBinding" maxReceivedMessageSize="2147483647"
maxBufferPoolSize="2147483647" >
        <readerQuotas maxArrayLength="2147483647"
maxStringContentLength="2147483647" />
        <security mode="Transport">
          <transport clientCredentialType="Certificate" />
        </security>
      </binding>

      <!-- Kahala GCWrapper version -->
      <binding name="GCWrapperSOAPInterfaceBinding" maxReceivedMessageSize="2147483647"
maxBufferPoolSize="2147483647">
        <readerQuotas maxArrayLength="2147483647" maxStringContentLength="2147483647" />
        <security mode="Transport">
          <transport clientCredentialType="Certificate"/>
        </security>
      </binding>
    </basicHttpBinding>
  </bindings>
  <behaviors>
    <endpointBehaviors>
      <!-- Kalaha Standard version -->
      <behavior name="endpointCredentialBehavior">
        <clientCredentials>
          <clientCertificate
            storeLocation="LocalMachine"
            storeName="Root"
            x509FindType="FindByThumbprint"
            findValue="XXXXX" />
        </clientCredentials>
      </behavior>

      <!-- Kalaha GCW version -->
      <behavior name="endpointCredentialBehaviorGCW">
```

```

        <clientCredentials>
            <clientCertificate
                storeLocation="LocalMachine"
                storeName="Root"
                x509FindType="FindByThumbprint"
                findValue="XXXXX" />
            </clientCredentials>
        </behavior>
    </endpointBehaviors>
</behaviors>
<client>
    <!-- Kahala Standard version -->
    <endpoint
        address="https://kahala-cat.usps.com/SOAPInterfaceWebModule/services/SOAPInterface"
        behaviorConfiguration="endpointCredentialBehavior"
        binding="basicHttpBinding"
        bindingConfiguration="SOAPInterfaceSoapBinding"
        contract="International.KPG.ServiceRef.SOAPInterface"
        name="SOAPInterface" />

    <!-- Kahala GCWrapper version -->
    <endpoint address="https://sdc1-cat.usps.gov/sdc-services/services/sdcInternationalPassthrough"
        behaviorConfiguration="endpointCredentialBehaviorGCW"
        binding="basicHttpBinding"
        bindingConfiguration="GCWrapperSOAPInterfaceBinding"
        contract="International.KPG.GCWrapper.GCWrapperSOAPInterface_SEI"
        name="GCWrapperSOAPInterface" />
</client>
</system.serviceModel>

```

Note:

1. The *findValue* property of the *X509Findtype* is not *XXXXX*. We are not publishing the value.
2. The "endpoint address" needs to be the URL for the KPG or SDC GCWrapper webservice.

Defines the EndPoint binding for International Mail Console (aka IDG-M, UPUXIT)

The following application configuration items must be defined to support the integration of the IMC with the International Pricing Engine.

```

<add key="IMC.Provider" value="SDC"/>
<add key="IMC.Available" value="True"/>
<add key="IMC.DateTimeAvailable" value="1/24/2021"/>
<add key="IMC.URL" value="https://eagmnmbd281.usps.gov:9443/idgm-reporter/supportedCountries"/>

```

The important element here is the IMC.URL. The IMC.URL maintains the IMC endpoint. Consult with the SDC team for the proper endpoint address for your environment.

Defines the database connection

```

<connectionStrings>
    <add
        name="International.Business"
        connectionString="Data Source=(LOCAL);Initial Catalog=USPS_INTL_2015;Integrated
            Security=True" providerName="RateEngine.Data.SQLDataSource"/>
    </connectionStrings>

```

Defines the Application settings

```

<appSettings>
    <add key="ExpressMailGuaranteedWS.Enabled" value="true"/>

```

</appSettings>

Domestic Pricing Engine Interface

The following operations are defined for the Domestic Pricing Engine. See “Pricing Engine Design Model.pdf” for details.

PostOffice Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business

CalculateServicePrice Method

Description

This method is used to calculate the total cost of a selected mail service and any selected extra services.

Syntax

CalculateServicePrice(in request : CalculationRequest) : CalculatedPricing

GetExtraServicesWithPricing Method

Description

This method is used to get a specified list of extra service with the price of each.

Syntax

GetExtraServicesWithPricing(in extraServicesRequest: ExtraServicesRequest) : ExtraServicesWithPricing

GetLocations Method

Description

This method is used to get locations by specifying a list of ZIP Codes. The similar method with the shippingDateTime input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetLocations(in zipCodes : ZipCodeCollection) : LocationCollection

GetLocations(in zipCodes : ZipCodeCollection, in shippingDateTime : DateTime) : LocationCollection

GetMailingRestrictions Method

Description

This method is used to get the mailing restrictions for a specified ZIP Code or collection of ZIP Codes. The similar method with the shippingDateTime input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetMailingRestrictions(in zipCodes : ZipCodeCollection) : MailingRestrictionCollection

GetMailingRestrictions(in zipcodes : ZipCodeCollection, in shippingDateTime : DateTime) :
MailingRestrictionCollection

GetPriceBySKU Method

Description

This method is used to get a collection of Prices for a specified SKU. The requested SKU can be a full 15 digit SKU or a partial SKU. The requested SKU can also contain wildcard characters "%". The result collection will contain all prices that match the requested SKU. Each node in the collection contains the SKU, Price, Postage Statement Section and Postage Statement Line.

Syntax

GetPriceBySKU(in priceBySKURequest : SKURequest) : SKUPriceCollection

GetServiceCommitments Method

Description

This method is used to get the mailing service commitments for the specified request. The caller is required to specify the following:

- Origin ZIP Code
- Destination ZIP Code
- Shipping date/time
- Mail shape and size

Syntax

GetServiceCommitments(in servicesRequest : ServicesRequest) : ServiceCommitmentCollection

GetServiceCommitments(in servicesRequest : ServicesRequest , LocationCollection locations) :
ServiceCommitmentCollection

GetServiceWithPricing Method

Description

This method is used to get a list of mailing services with associated extra services for the specified mail piece attributes.

Syntax

GetServiceWithPricing(in request : ServiceRequest) : ServiceWithPricing

GetServiceWithPricing(in request : ServiceRequest, in serviceContainerAttributes :
ServiceContainerAttributes) : ServiceWithPricing

GetMailingFees Method

Description

The method is used to get the Mailing Fee for a specified key.

Syntax

GetMailingFees(in mailingFeeRequest : MailingFeeRequest) : MailingFee

GetZone Method

Description

The method is used to get the zone information between origination and destination ZIP codes. The similar method with the shippingDateTime input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetZone(in originZIPCode : ZipCode, in destinationZIPCode: ZipCode) : Zone

GetZone(in originZIPCode : ZipCode, in destinationZIPCode: ZipCode, in shippingDateTime : DateTime) : Zone

GetZones Method

Description

The method is used to get the zone information for a 3-digit ZIP Code. When the ZIP Code collection contains more than a single 3-digit ZIP Code, zone information is returned to each ZIP Code passed. The similar method with the shippingDateTime input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetZones(in zipCodes : ZipCodeCollection) : ZoneCollection

GetZones(in zipCodes : ZipCodeCollection, in shippingDateTime : DateTime) : ZoneCollection

Validate Method

Description

This method is used to validate the specified mail properties. The method will return origin and destination location objects.

Syntax

Validate(in servicesRequest : ServicesRequest) : LocationCollection

CalculationRequest Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

ServicesRequest

Properties

Selections : CalculationSelections

IsExtraServiceConversational : bool

CalculatedPricing Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

Geography : Geography

Commitments : ServiceCommitmentCollection

Restrictions : MailingRestrictionCollection

Service : PostageService

Annotations : AnnotationCollection

Totals : PostagePriceCollection

Effective: DateTime

CalculationSelections Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

MailServiceID : MailServiceID

DeliveryOptionKey : string

ExtraServices : ExtraServiceIDCollection

ExtraServicesRequest Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

IDCard : IDCard

Weight : Weight

ExcludeSections : ResultSectionCollection

MailServiceID : MailServiceID

ExtraServices: ExtraServiceIDCollection

ExtraServiceParameters : AdditionalInputValueCollection

ShippingDateTime : DateTime

ExtraServicesWithPricing Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

ExtraServices : ExtraPostageServiceCollection

Annotations : AnnotationCollection

Effective: DateTime

Geography Class

Namespace

ManTech.Usps.RateEngine.Domestic.Entity

Base Class

None

Properties

DestinationCity : string

DestinationState : string

DestinationIsAPO : bool

OriginCity : string

OriginState : string

OriginIsAPO : bool

Zone : int

IsLocal : bool
CommonNDC : bool

MailingFee Class

Namespace
ManTech.Usps.RateEngine.Business.Entity

Base Class
None

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

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
ShippingDateTime: DateTime

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

MailPieceAttributes Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

Origin : LocationAttributes

Destination : LocationAttributes

ShippingDateTime : DateTime

Dimensions : Dimensions

Weight : Weight

MailShapeAndSizes : MailShapeAndSizeCollection

MailPieceContents : MailPieceContentCollection

MailEntryPoint : DestinationEntry.EntryValue

Sortation : string

DestinationEntry.EntryValue Enumerator

None

DNDC

DSCF

DDU

DFSS

MailPieceAttributes.LocationAttributes Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

ZIP : ZipCode

IsPOBox : bool

MailPieceContent Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Key : string

MailPieceContentCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<MailPieceContent>

Properties

None

ServicesRequest Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

IDCard : IDCard

MailPieceAttributes : MailPieceAttributes

ExcludeSections : ResultSectionCollection

ExtraServiceParameters : AdditionalInputValueCollection

ServiceWithPricing Class

Namespace

ManTech.Usps.RateEngine.Domestic.Business.Entity

Base Class

None

Properties

Geography : Geography

Commitments : ServiceCommitmentCollection

Restrictions : MailingRestrictionCollection

Services : PostageServiceCollection

Annotations : AnnotationCollection

Effective : DateTime

SKURequest Class

Namespace

ManTech.Usps.RateEngine.Business.Entity

Base Class

None

Properties

IDCard : IDCard

SKU : string

ShippingDateTime : DateTime

SKUPrice Class

Namespace

ManTech.Usps.RateEngine.Business.Entity

Base Class

None

Properties

SKU : string

Price : decimal
PostageStatementSection : string
PostageStatementLine : int

SKUPriceCollection Class

Namespace
ManTech.Usp.RateEngine.Business.Entity

Base Class
List <SKUPrice>

Properties
N/A

International Pricing Engine Interface

The following operations are defined for the International Pricing Engine. See “Pricing Engine Design Model.pdf” for details.

PostOffice Class

Namespace

ManTech.Usps.RateEngine.International.Business

CalculateServicePrice

Description

This method is used to calculate the total cost of a selected mail service and any selected extra services.

Syntax

CalculateServicePrice(in request : CalculationRequest) : CalculatedPricing

GetCountries

Description

This method is used to get the collection of countries. The similar methods with the shippingDate input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetCountries() : CountryCollection

GetCountries(in shippingDate : DateTime) : CountryCollection

GetCountries(in clientType : MailProperties.ClientType) : CountryCollection

GetCountries(in clientType : MailProperties.ClientType, in shippingDate : DateTime) : CountryCollection *GetCountryInformation*

Description

This method is used to get the Country Information for a specific country. This includes the country price group, prices and other guidelines. The similar methods with the shippingDate input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetCountryInformation(in country : Country, in calculatorID : CalculatorID) : CountryInformation

GetCountryInformation(in country : Country) : CountryInformation

GetCountryInformation(in country : Country, in shippingDate : DateTime) : CountryInformation

GetCountryRegulations

Description

This method is used to get the collection of Regulations for a specific country. The similar methods with the shippingDate input parameter changes the behavior to produce results available as of the date specified.

Syntax

GetCountryRegulations(in country : Country) : CountryRegulationCollection

GetCountryRegulations(in country : Country, in shippingDate : DateTime) : CountryRegulationCollection

GetCountryRegulations(in country : Country, in clientType : MailProperties.ClientType) :
CountryRegulationCollection

GetCountryRegulations(in country : Country, in clientType : MailProperties.ClientType, in shippingDate :
DateTime) : CountryRegulationCollection

GetExtraServicesWithPricing

Description

This method is used to get a specified list of extra service with the price of each.

Syntax

GetExtraServicesWithPricing (in extraServicesRequest : ExtraServicesRequest) : ExtraServicesWithPricing

GetServicesWithPricing

Description

This method is used to get a list of mailing services with associated extra services for the specified mail piece attributes.

Syntax

GetServicesWithPricing(in servicesRequest : ServicesRequest) : ServicesWithPricing

GetMailingFeesMethod

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 branch 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

Syntax

GetMailingFees(in mailingFeeRequest : MailingFeeRequest) : MailingFee

GetServiceCommitments Method

Description

This method is used to retrieve service commitments (delivery dates) for the available mail services based upon the request parameters supplied.

Syntax

GetServiceCommitments(in request : RequestProperties, inout serviceCommitment : ServiceCommitmentCollection) : void

GetServiceCommitmentsStatesOrProvinces

Description

This method will return the states or provinces, within the specified country, supporting PMEI Guaranteed delivery.

Syntax

GetServiceCommitmentsStatesOrProvinces(in request : RequestProperties, inout expressMailGuaranteedItems : ExpressMailGuaranteedItemCollection) void

GetServiceCommitmentCities

Description

This method will return the cities, within state or province and the specified country, supporting PMEI Guaranteed delivery.

Syntax

GetServiceCommitmentsCities(in request : RequestProperties, inout expressMailGuaranteedItems : ExpressMailGuaranteedItemCollection) void

GetServiceCommitmentsPostalCodes

Description

This method will return the postal code, representing the state or province within the specified country, supporting PMEI.

Syntax

```
GetServiceCommitmentsPostalCodes(in request : RequestProperties, inout  
expressMailGuaranteedItems : ExpressMailGuaranteedItemCollection) void
```

GetPriceBySKU Method

Description

This method is used to get a collection of Prices for a specified SKU. The requested SKU can be a full 15 digit SKU or a partial SKU. The requested SKU can also contain wildcard characters "%". The result collection will contain all prices that match the requested SKU. Each node in the collection contains the SKU, Price, Postage Statement Section and Postage Statement Line.

Syntax

```
GetPriceBySKU(in priceBySKURequest : SKURequest) : SKUPriceCollection
```

Validate

Description

This method is used to validate the specified mail properties.

Syntax

```
Validate(servicesRequest : ServicesRequest) : void
```

ValidateCountry

Description

This method is used to discover if a specified country is valid. The similar methods with the shippingDate input parameter changes the behavior to produce results available as of the date specified.

Syntax

```
ValidateCountry(in countryID : CountryID) : void
```

```
ValidateCountry(in countryID : CountryID, in shippingDate : DateTime) : void
```

CalculatedPricing Class

Namespace

ManTech.Usps.RateEngine.International.Business.Entity

Base Class
None

Properties

Geography : Geography
Commitments : ServiceCommitmentCollection
Service : PostageService
Annotations : AnnotationCollection
Totals : PostagePriceCollection
Regulations : CountryRegulation
GXGLocations : GXGLocationCollection
Effective : DateTime

CalculationRequest Class

Namespace
ManTech.Usps.RateEngine.International.Business.Entity

Base Class
ServicesRequest

Properties

Selections : CalculationSelections
IsExtraServiceConversational : bool

CalculationSelections Class

Namespace
ManTech.Usps.RateEngine.International.Business.Entity

Base Class
None

Properties

MailServiceID : MailServiceID
DeliveryOptionKey : string
ExtraServices : ExtraServiceIDCollection

Geography Class

Namespace
ManTech.Usps.RateEngine.International.Business.Entity

Base Class
None

Properties

ID : CountryID
Name : string
Code : string
Number : string

ExtraServicesRequest Class

Namespace

ManTech.Usps.RateEngine.International.Business.Entity

Base Class

None

Properties

IDCard : IDCard
Weight : Weight
ExcludeSections : ResultSectionCollection
MailServiceID : MailServiceID
ExtraServices : ExtraServiceIDCollection
ExtraServiceParameters : AdditionalInputValueCollection
ShippingDateTime : DateTime

ExtraServicesWithPricing Class

Namespace

ManTech.Usps.RateEngine.International.Business.Entity

Base Class

None

Properties

ExtraServices : ExtraPostageServiceCollection
Annotations : AnnotationCollection
Effective: DateTime

MailingFee Class

Namespace

ManTech.Usps.RateEngine.Business.Entity

Base Class

None

Properties

Cost : decimal
FeeKey : string
Price : decimal
ValueKey : string
ValueKeyLowerLimit : decimal
ValueKeyUpperLimit : decimal
Effective : DateTime

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
ShippingDateTime: DateTime

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

MailPieceAttributes Class

Namespace

ManTech.Usps.RateEngine.International.Business.Entity

Base Class

None

Properties

Origin : LocationAttributes

Destination : LocationAttributes

ShippingDateTime : DateTime

Dimensions : Dimensions

Weight : Weight

MailShapeAndSizes : MailShapeAndSizeCollection

MailPieceContents : MailPieceContentCollection

MailPieceAttributes.LocationAttributes Class

Namespace

ManTech.Usps.RateEngine.International.Business.Entity

Base Class

None

Properties

CountryID : CountryID

CountryName : string

CountryCode : string

CountryNumber : string

PostalCode : string

IsPOBox : bool

ServicesRequest Class

Namespace

ManTech.Uspz.RateEngine.International.Business.Entity

Base Class

None

Properties

IDCard : IDCard

MailPieceAttributes : MailPieceAttributes

ExcludeSections : ResultSectionCollection

ExtraServiceParameters : AdditionalInputValueCollection

ServicesWithPricing Class

Namespace

ManTech.Uspz.RateEngine.International.Business.Entity

Base Class

None

Properties

Geography : Geography

Commitments : ServiceCommitmentCollection

Services : PostageServiceCollection

Regulations : CountryRegulation

GXGLocations : GXGLocationCollection

Annotations : AnnotationCollection

Errors : PricingEngineErrorCollection

Effective : DateTime

SKURequest Class

Namespace

ManTech.Uspz.RateEngine.Business.Entity

Base Class

None

Properties

IDCard : IDCard

SKU : string

ShippingDateTime : DateTime

SKUPrice Class

Namespace

ManTech.Usp.RateEngine.Business.Entity

Base Class

None

Properties

SKU : string

Price : decimal

PostageStatementSection : string

PostageStatementLine : int

SKUPriceCollection Class

Namespace

ManTech.Usp.RateEngine.Business.Entity

Base Class

List <SKUPrice>

Properties

N/A

Rate Engine Framework

AdditionalInputValue

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

TypeID : string

EnteredValue : decimal

AdditionalInputValueCollection

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<AdditionalInputValue>

Properties

None

Annotation Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Text : string

Associations : AssociationCollection

Annotation.AssociationCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<int>

Properties

None

AnnotationCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<Annotation>

Properties

None

Country Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

CountryID : CountryID

Name : string

NameParts : string[]

Code : string

CountryNumber : string

TypeOf : short

Status : CountryStatus

IsDisplayed : bool

ShowOnlinePrice : bool

MaxWeight : Weight

IsParent : bool

Aka : CountryAliasCollection

Country.Status Enumerator

Unknown

Normal

NoOnlineService

ServiceSuspended

CountryAlias Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

Alias : string

CountryAliasCollection Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

List<CountryAlias>

Properties

None

CountryCollection Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

List<Country>

Properties

None

CountryID Structure

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

Value : int

CountryInformation Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

List<CountryInformationItem>

Properties

None

CountryInformationItem Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

CountryToMailService : CountryToMailService

CountryToExtraServices : CountryToExtraServiceCollection

Price : decimal

OnlinePrice : decimal

CommercialPlusPrice : decimal

CountryRegulation Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

Country : Country

Prohibitions : string

Restrictions : string

Observations : string

CustomsForms : string

ExpressMailRegulations : string

ExpressMailNote : string

AdditionalRestrictions : string

CountryRegulationCollection Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

List<CountryRegulation>

Properties

None

CountryToMailService Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

ServiceTitle : string

MailServiceID : MailServiceID

IsAvailable : bool

WeightLimit : Weight

WeightLimitOperator : Weight.WeightOperator

weightMin : Weight

WeightMinOperator : Weight.WeightOperator

InsuranceMax : decimal

PriceGroups : PriceGroupCollection

EstimatedDeliveryTime : string

DimensionalRange : DimensionalRange

CountryToExtraService Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

ServiceTitle : string

ExtraServiceID : ExtraServiceID

IsAvailable : bool

Price : decimal

OnlinePrice : decimal

CountryToExtraServiceCollection Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

List<CountryToExtraService>

Properties

None

Dimensions Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Length : Dimension

Width : Dimension

Height : Dimension

Girth : Dimension

IsRectangular : bool

RoundDownToQuarterInch : bool

DimensionalRange Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

MaxLength : Dimension

MaxWidth : Dimension

MaxHeight : Dimension

MaxLengthPlusGirth : Dimension

MaxLWH : Dimension

MinLength : Dimension

MinWidth : Dimension

MinHeight : Dimension

MinThickness : Dimension
Text : string
AdditionalSizes : DimensionalRangeCollection

ExtraPostageService Class

Namespace
ManTech.Uspz.RateEngine.Entity

Base Class
None

Properties
ID : ExtraServiceID
Name : string
GroupCode : string
Prices : PostagePriceCollection
AdditionalFields : AdditionalInputCollection
Attributes : PostageAttributeCollection

ExtraPostageService.AdditionalInput Class

Namespace
ManTech.Uspz.RateEngine.Entity

Base Class
None

Properties
Key : string
Min : decimal
Max : decimal

ExtraPostageService.AdditionalInputCollection Class

Namespace
ManTech.Uspz.RateEngine.Entity

Base Class
List<ExtraPostageService. AdditionalInput >

Properties
None

ExtraPostageServiceCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<ExtraPostageService>

Properties

None

ExtraServiceID Structure

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Value : int

ExtraServiceIDCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<ExtraServiceID>

Properties

None

GXGLocation Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

LocationName : string

Street : string

City : string

State : string
ZipCode ZipCode :
WeekdayCutOff : string
SaturdayCutOff : string

GXGLocationCollection Class

Namespace
ManTech.Usps.RateEngine.International.Entity

Base Class
List<GXGLocation>

Properties
None

IDCard Class

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
None

Properties
CallerID : string
SourceID : string
CustomerType : string

Location Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
None

Properties
ZipCode : ZipCode
City : string
State : string
FinanceCode : string
IsApo : bool
ClassificationCode : string
IsValid : bool

IsMailable : bool
IsHoldForPickupAvailable : bool
IsSundayHolidayAvailable : bool
NonDeliveryDays : List<DayOfWeek>
PremiumDays : List<DayOfWeek>
LocationType : TypeOfLocation
IsPOBox : bool

TypeOfLocation Enumerator

Origination
Destination
Neither

LocationCollection Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
List<Location>

Properties
None

MailingRestriction Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
None

Properties
ZipCode : ZipCode
Restrictions : RestrictionCollection

MailingRestriction.Restriction Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
None

Properties
Code : string
Description : string

MailingRestriction.RestrictionCollection Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
List< MailingRestriction.Restriction>

Properties
None

MailingRestrictionCollection Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
List<MailingRestriction>

Properties
None

MailServiceID Structure

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
None

Properties
Value : short

MailShapeAndSizeEnum Enumerator

Unknown
Letter
LetterLarge
Package
Postcard
FlatRateBox

FlatRate
ExpressMailServices
PriorityMailServices
FirstClassMailServices
PostalServices
FlatRateEnvelope

MailShapeAndSizeCollection Class

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
List<MailShapeAndSize>

Properties
None

PostageAttribute

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
None

Properties
Key : string
Value : string

PostageAttributeCollection

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
List<PostageAttribute>

Properties
None

PriceDetail Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Key : string

Value : string

PriceDetailCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<PriceDetail>

Properties

None

PriceGroup Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

None

Properties

Key : string

Value : string

PriceGroupCollection Class

Namespace

ManTech.Usps.RateEngine.International.Entity

Base Class

List<PriceGroup>

Properties

None

PostagePrice Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Amount : decimal

Type : string

Details : PriceDetailCollection

PostagePriceCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<PostagePrice>

Properties

None

PostageService Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

ID : MailServiceID

Name : string

DeliveryOptions : DeliveryOptionCollection

GroupCode : string

MaxWeight : Weight

MinWeight : Weight

DimensionalRange : DimensionalRange

ExtraServices : ExtraPostageServiceCollection

Attributes : PostageAttributeCollection

PostageService.DeliveryOption Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Key : string

Commitment : string

Name : string

Prices : PostagePriceCollection

PostageService.DeliveryOptionCollection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

List<PostageService.DeliveryOption>

Properties

None

ResultSection Class

Namespace

ManTech.Usps.RateEngine.Entity

Base Class

None

Properties

Key : ResultSection.SectionType

ResultSection.SectionType Enumerator

UnknownCountryRegulations

DimensionalRange

ExtraServices

Geography

GXGLocations

PriceDetails

Restrictions
ServiceCommitments
Annotations
Breadcrumb
RelatedLinks
HelpLinks
Notes
Footnotes
ServiceCommitmentCall

ResultSectionCollection Class

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
List<ResultSection>

Properties
None

Weight Class

Namespace
ManTech.Usps.RateEngine.Entity

Base Class
None

Properties
Ounces : decimal
Pounds : decimal
Units : WeightUnit

Weight.WeightUnit Enumerator

Unknown
Ounces
Pounds

ZipCode Structure

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
None

Properties
Value : string

ZipCodeCollection Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
List<ZipCode>

Properties
None

Zone Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
None

Properties
OriginZipCode : ZipCode
DestinationZipCode : ZipCode
ZoneCount : int
IsIntraBMC : bool
IsLocal : bool
Has5DigitZones : bool
Zone5DigitZones : Zone5DigitCollection

Zone. Zone5Digit Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
None

Properties
OrigZIPFirst : ZipCode
OrigZIPLast : ZipCode

DestZIPFirst : ZipCode
DestZIPLast : ZipCode
ZoneCount : int

Zone. Zone5DigitCollection Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
List<Zone. Zone5Digit>

Properties
None

ZoneCollection Class

Namespace
ManTech.Usps.RateEngine.Domestic.Entity

Base Class
List<Zone>

Properties
None

Service Delivery Extensions

DOMESTIC_NAMESPACE

OnlineServiceCommitment Class

Namespace

Usps.RateEngine.ServiceDeliveryExtensions.Domestic.Entity

Base Class

ServiceCommitment

Properties

EstimatedDeliveryTime : string

DeliveryDateTime : DateTime

IsHoliday : bool

CommitmentName ; string

CommitmentTime : string

CommitmentSequence : string

locations : ServiceCommitment.PostalLocationCollection

holdForPickupLocations : ServiceCommitment.PostalLocationCollection

ServiceCommitment Class

Namespace

Usps.RateEngine.ServiceDeliveryExtensions.Domestic.Entity

Base Class

None

Properties

ServiceCommitmentType : Type

Product : string

ErrorNumber : int

ErrorMessage : string

ServiceCommitmentGuarantee : Guarantee

UsedByMailService : MailServiceIDCollection

ServiceCommitment.Guarantee Enumerator

Unknown

NoGuarantee

MoneyBackGuarantee

LossOnlyGuarantee

ServiceCommitment.Type Enumerator

Unknown = 0
ExpressMail
PriorityMail
FirstClassMail
StandardMail
Periodicals
PackageServices

ServiceCommitment.PostalLocation Class

Namespace
Usps.RateEngine.ServiceDeliveryExtensions.Domestic.Entity

Base Class
None

Properties
CutOff : string
Facility : string
FacilityID : string
Street : string
City : string
State : string
ZipCode : string
ZipCode4 : string
ScheduledDeliveryDate : DateTime
closeTimes : string[]

ServiceCommitment.PostalLocationCollection Class

Namespace
Usps.RateEngine.ServiceDeliveryExtensions.Domestic.Entity

Base Class
List<ServiceCommitment.PostalLocation>

Properties
None

ServiceCommitmentCollection Class

Namespace
Usps.RateEngine.ServiceDeliveryExtensions.Domestic.Entity

Base Class
List<ServiceCommitment>

Properties
None

INTERNATIONAL_NAMESPACE

ExpressMailGuaranteed Class

Namespace
Usps.RateEngine.ServiceDeliveryExtensions.International.Entity

Base Class
ServiceCommitment

Properties
None

ServiceCommitment Class

Namespace
Usps.RateEngine.ServiceDeliveryExtensions.International.Entity

Base Class
None

Properties
Type : ServiceCommitmentType
ErrorNumber : int
ErrorMessage : string
DeliveryDate : string
City : string
StateOrProvince : string
ShippingDate : DateTime
ShippingTime : string
UsedByMailService : MailServiceIDCollection

ServiceCommitmentCollection Class

Namespace
Usps.RateEngine.ServiceDeliveryExtensions.International.Entity

Base Class
List<ServiceCommitment>

Properties
None

Customs Forms Engine

GetCustomsForms Method

Description

This method returns the Customs Forms hierarchy tree for the specified properties.

Syntax

```
GetCustomsForms(in customsFormsMailProperties : CustomsFormsMailProperties) :  
CustomsFormCollection
```

GetCustomsFormsPage Method

Description

This method returns the Customs Forms hierarchy tree, a list of available mail services and footnotes for the specified properties.

Syntax

```
GetCustomsFormsPage(in customsFormsMailProperties : CustomsFormsMailProperties) :  
CustomsFormsPage
```

GetCustomsFormsSubPage Method

Description

This method returns the Customs Forms hierarchy tree and footnotes for the specified properties.

Syntax

```
GetCustomsFormsSubPage(in customsFormsMailProperties : CustomsFormsMailProperties) :  
CustomsFormsPage
```

Validate Method

Description

This method returns True or False if a Customs Form is needed for the specified properties.

Syntax

```
Validate(in customsFormsMailProperties : CustomsFormsMailProperties) : void
```

CustomsFormsCalculator Class

Namespace

ManTech.Usps.RateEngine.CustomsForms

Base Class

None

CustomsFormCollection Class

Namespace

ManTech.Uspz.RateEngine.CustomsForms.Entity

Base Class

List<CustomsForm>

Properties

None

CustomsForm Class

Namespace

ManTech.Uspz.RateEngine.CustomsForms.Entity

Base Class

None

Properties

FormName : TextWithLinks

Condition : TextWithLinks

Notes : TextWithLinks

ChildCustomsForms : CustomsFormCollection

CustomsFormMailProperties Class

Namespace

ManTech.Uspz.RateEngine.CustomsForms.Entity

Base Class

None

Properties

IsDocument : bool?

IsPotentiallyDutiable : bool?

IsGreaterThan3_4Thick : bool?

IsUniformlyThick : bool?

CountryID : CountryID

OrginZipCode : ZipCode

DestinationZipCode : ZipCode

IDCard : IDCard

ShippingDate : DateTime

CustomsFormsPage Class

Namespace

ManTech.Usps.RateEngine.CustomsForms.Entity

Base Class

None

Properties

MailServices : MailServiceCollection

Country : Country

CustomsFormsMailProperties : CustomsFormsMailProperties

AreZIPCodeRequired : bool

CustomsForms : CustomsFormCollection

Footnotes : TextWithLinksCollection

Appendix

Customer Type Codes

See “Client IDs and Customer Types.pdf” for complete details.

Group Code Description

Mail Service Group Codes

Index	Field Name	Code	Description
0	Service	D	Domestic
		I	International
1	Mail Type	E	Priority Mail Express
		P	Priority Mail
		Z	Priority Mail Critical Mail
		C	ECOMPRO
		F	First-Class Mail
		T	Standard Post
		M	Media
		L	Library
		B	Bound Printed Matter
		S	Standard Mail
		R	Parcel Return Service
		V	Parcel Select
		W	Parcel Select Lightweight
		O	PMOD
		D	EDDM
		G	GXG
		Q	ISAL
		A	Airmail
		Y	IPA
		X	Extra Service (see Extra Service Group Code table)
2	Sub Type	X	None
		F	Flat Rate
		R	Regional Rate
		A	Automation
		B	Nonautomation
		Q	AutomationDisc
		Y	NonautomationDisc
		M	Machinable
		N	Nonmachinable
		C	Carrier Route
		D	Carrier Route NonAutomation
		I	Irregular
		P	Presorted
		V	Nonpresorted
		U	Cubic
3	Shape	X	None
		B	Box
		E	Envelope
		C	Postcard
		L	Letter
		F	Flat or Large Envelope
		P	Parcel or Package
		M	M Bag
4	Shape Sub	0...	Shape sub version 0 to number of

5	Delivery Type	X	None
		S	Sunday/Holiday
		H	Hold For Pickup
6	Delivery Time	X	None
		A	AM
		P	PM

Extra Service Group Codes

Index	Field Name	Code	Description
0	Service	D	Domestic
		I	International
1	Type	X	Extra Service
2	Extra Service Type	X	None
		I	Insurance
		R	Return Receipt
		C	Collect on Delivery
		D	Certificate of Mailing
		E	Certified Mail
		T	USPS Tracking
		S	Signature Confirmation
		G	Registered Mail
		J	Restricted Delivery
		H	Special Handling
		A	Adult Signature Required
		B	Adult Signature Restricted Delivery
		M	10:30 Delivery
		L	Parcel Airlift
		Z	Sunday/Holiday Delivery
K	Picture Permit Imprint		
U	USPS Delivery Confirmation		
3	Associated Mail Type	X	None
		E	Priority Mail Express
		P	Priority Mail
		G	GXG
4	Variation	0...	Variation version 0 to number of
5	Sub Type	X	None
		E	Electronic
		M	for Merchandise
		A	After Mailing
6	Not currently used	X	None

Attribute Keys

Domestic

Key	Description
MailEntry	The Mail Entry type
Sort	The Sortation
DimensionalWeightR	The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Retail Price.
DimensionalWeightCB	The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Commercial Base Price.
DimensionalWeightCP	The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Commercial Plus Price.
DimensionalWeightNA	The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Price and the Price Type is Not Applicable.

International

Key	Description
IncludedIndemnity	The included Insurance Indemnity for the mail service / weight.
DeclaredValueSDR	The value with the Special Drawing Right applied to the declare value.
InclNceNonnegotiableDoc	The Included Insurance amount when the mail piece contains only Nonnegotiable Document(s).
InclNceMerchandise	The Included Insurance amount when the mail piece contains Merchandise.
ECOMPRO	Set to True or False to indicate that Priority Mail International mail service is or is not ECOMPRO.
lp_type	Indicator if the block information is for a Logistics Partner or Post. See the Web Service UPUXIT SDC Spec
lp_code	The Logistics Partner code that will support international transportation.
lp_barcodeType	The barcode(s) that a Logistics Partner will support for international transportation. A commas delimited list of Barcodes. i.e. S10,W12

Content Keys

Domestic

Key	Description
LiveAnimals	The mail piece content is a Live Animal(s). Equivalent to Special Handling - Live Animal Transportation
DayOldPoultry	The mail piece content is a Live Animal(s) that is Day Old Poultry.
Hazmat	The mail piece content is Hazmet. Equivalent to Special Handling - Hazardous Material Transportation
GroundTransportation	The mail piece requires Ground Transportation.
Nonmachinable	The mail piece is Not Machinable.
CrematedRemains	The mail piece content is Cremated Remains Equivalent to Special Handling - Cremated Remains
Perishables	The mail piece content is Perishable. Equivalent to Special Handling - Perishables
Fragile	The mail piece content is Fragile Equivalent to Special Handling – Fragile
NonnegotiableDocument	The mail piece contains only Nonnegotiable Document(s).
nonprofit	The mail piece is being mailed from a nonprofit.
MedicalSupplies	The mail piece contains medical supplies
Pharmaceuticals	The mail piece contains pharmaceutical supplies

Note: Content Keys are subject to change.

International

Key	Description
Nonmachinable	The mail piece is Not Machinable.
CrematedRemains	The mail piece contents Cremated Remains
NonnegotiableDocument	The mail piece contains only Nonnegotiable Document(s).
MedicalSupplies	The mail piece contains medical supplies
Pharmaceuticals	The mail piece contains pharmaceutical supplies
Rolls	The mail piece is a Roll.

Note: Content Keys are subject to change.

Price Detail Keys

Domestic

Key	Description
LA	Live Animal Fee
S	Sunday/Holiday Fee
A	10:30 AM Delivery Fee
NM	Nonmachinable Fee
X	Base Price
F	Fragile Fee

International

Key	Description
NM	Nonmachinable Fee
X	Base Price

Price Group Keys

International

Key	Description
R	Retail Price
B	Commercial Base Price
P	Commercial Plus Price
1	NSA 1 Price
2	NSA 2 Price

The Price Group Keys matches the SKU definition for Price Types.

Sortation Keys

Domestic

Key	Description
5D	5-Digit
3D	3-Digit
BAS	Basic
CR	Carrier Route
FSS	FSS
FSSC	FSS Scheme Container
FSFC	FSS Facility Container
NDC	NDC
SCF	SCF
TBE	EMM Tray Box
TBF	Full Tray Box
TBH	Half Tray Box
TBT	Flat Tub Tray Box
PST	Presort
MIX	Any mixed mailing

Note: Sortation Keys will be extended as new sortation's are supported

Code Examples

Domestic Pricing Engine

GETSERVICEWITHPRICING

```
ServicesRequest request = new ServicesRequest();

// id card
request.IDCard.CallerID = "14";
request.IDCard.SourceID = "8";
request.IDCard.CustomerType = "008B3";

// mail piece attributes
request.MailPieceAttributes.MailShapeAndSize = MailShapeAndSizeEnum.Package;
request.MailPieceAttributes.ShippingDateTime = new DateTime(2014, 5, 12, 8, 0, 0);

// set ZIP codes
request.MailPieceAttributes.Origin.ZIP = new ZipCode("43338");
request.MailPieceAttributes.Destination.ZIP = new ZipCode("20603");
request.MailPieceAttributes.Destination.IsPOBox = false;

// defaults to Unknown, set as an example
request.MailPieceAttributes.MailEntryPoint = DestinationEntry.EntryValue.Unknown;

// set weight
request.MailPieceAttributes.Weight = new Weight(1,0);

// dimensions, default is rectangular, L = 0, H = 0, W = 0, G = 0
request.MailPieceAttributes.Dimensions.IsRectangular = true;
request.MailPieceAttributes.Dimensions.Length = 12.0M;
request.MailPieceAttributes.Dimensions.Height = 5.0M;
request.MailPieceAttributes.Dimensions.Width = 4.0M;
request.MailPieceAttributes.Dimensions.Girth = 0.0M;

// Content values
request.MailPieceAttributes.MailPieceContents.Clear();
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "LiveAnimals" });
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "Nonmachinable" });

// exclude sections
request.ExcludeSections.Clear();
request.ExcludeSections.Add(new ResultSection() { Key = ResultSection.SectionType.DimensionalRange });

ServicesWithPricing services_with_pricing = new PostOffice().GetServicesWithPricing(request);
```

CALCULATE SERVICE PRICE

```
CalculationRequest request = new CalculationRequest();

// selections
request.Selections.MailServiceID = new MailServiceID(2);
request.Selections.DeliveryOptionKey = "XP";
request.Selections.ExtraServices.Add(new ExtraServiceID(101));
request.ExtraServiceParameters.Add(new AdditionalInputValue("dvi", "4000"));

// id card
request.IDCard.CallerID = "14";
request.IDCard.SourceID = "8";
request.IDCard.CustomerType = "008B3";

// mail piece attributes
request.MailPieceAttributes.MailShapeAndSize = MailShapeAndSizeEnum.Package;
request.MailPieceAttributes.ShippingDateTime = new DateTime(2014, 5, 12, 8, 0, 0);

// set ZIP codes
request.MailPieceAttributes.Origin.ZIP = new ZipCode("43338");
request.MailPieceAttributes.Destination.ZIP = new ZipCode("20603");
request.MailPieceAttributes.Destination.IsPOBox = false;
// defaults to Unknown, set as an example
request.MailPieceAttributes.MailEntryPoint = DestinationEntry.EntryValue.Unknown;

// set weight
request.MailPieceAttributes.Weight = new Weight(1,0);

// dimensions, default is rectangular, L = 0, H = 0, W = 0, G = 0
request.MailPieceAttributes.Dimensions.IsRectangular = true;
request.MailPieceAttributes.Dimensions.Length = 12.0M;
request.MailPieceAttributes.Dimensions.Height = 5.0M;
request.MailPieceAttributes.Dimensions.Width = 4.0M;
request.MailPieceAttributes.Dimensions.Girth = 0.0M;

// Content values
request.MailPieceAttributes.MailPieceContents.Clear();
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "LiveAnimals" });
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "Nonmachinable" });

// exclude sections
request.ExcludeSections.Clear();
request.ExcludeSections.Add(new ResultSection() { Key = ResultSection.SectionType.DimensionRange });

CalculatedPricing calculated_pricing = new PostOffice().CalculateServicePrice (request);
```

International Pricing Engine

GETSERVICEWITHPRICING

```
ServicesRequest request = new ServicesRequest();

// id card
request.IDCard.CallerID = "14";
request.IDCard.SourceID = "8";
request.IDCard.CustomerType = "008B3";

// mail piece attributes
request.MailPieceAttributes.MailShapeAndSize = MailShapeAndSizeEnum.Package;
request.MailPieceAttributes.ShippingDateTime = new DateTime(2014, 5, 12, 8, 0, 0);

// set origin zip code and Country
request.MailPieceAttributes.Origin.PostalCode = "43338";
request.MailPieceAttributes.Destination.CountryID = new CountryID(12000);

// set weight
request.MailPieceAttributes.Weight = new Weight(1,0);

// dimensions, default is rectangular, L = 0, H = 0, W = 0, G = 0
request.MailPieceAttributes.Dimensions.IsRectangular = true;
request.MailPieceAttributes.Dimensions.Length = 12.0M;
request.MailPieceAttributes.Dimensions.Height = 5.0M;
request.MailPieceAttributes.Dimensions.Width = 4.0M;
request.MailPieceAttributes.Dimensions.Girth = 0.0M;

// Content values
request.MailPieceAttributes.MailPieceContents.Clear();
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "Nonmachinable" });

// exclude sections
request.ExcludeSections.Clear();
request.ExcludeSections.Add(new ResultSection() { Key = ResultSection.SectionType.DimensionalRange });

ServicesWithPricing services_with_pricing = new PostOffice().GetServicesWithPricing(request);
```

CALCULATE SERVICE PRICE

```
CalculationRequest request = new CalculationRequest();

// selections
request.Selections.MailServiceID = new MailServiceID(1);
request.Selections.DeliveryOptionKey = "XX";
request.Selections.ExtraServices.Add(new ExtraServiceID(107));
request.ExtraServiceParameters.Add(new AdditionalInputValue("dvi", "4000"));

// id card
request.IDCard.CallerID = "14";
request.IDCard.SourceID = "8";
request.IDCard.CustomerType = "008B3";

// mail piece attributes
request.MailPieceAttributes.MailShapeAndSize = MailShapeAndSizeEnum.Package;
request.MailPieceAttributes.ShippingDateTime = new DateTime(2014, 5, 12, 8, 0, 0);

// set origin zip code and Country
request.MailPieceAttributes.Origin.PostalCode = "43338";
request.MailPieceAttributes.Destination.CountryID = new CountryID(12000);

// set weight
request.MailPieceAttributes.Weight = new Weight(1,0);

// dimensions, default is rectangular, L = 0, H = 0, W = 0, G = 0
request.MailPieceAttributes.Dimensions.IsRectangular = true;
request.MailPieceAttributes.Dimensions.Length = 12.0M;
request.MailPieceAttributes.Dimensions.Height = 5.0M;
request.MailPieceAttributes.Dimensions.Width = 4.0M;
request.MailPieceAttributes.Dimensions.Girth = 0.0M;

// Content values
request.MailPieceAttributes.MailPieceContents.Clear();
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "LiveAnimals" });
request.MailPieceAttributes.MailPieceContents.Add(new MailPieceContent() { Key = "Nonmachinable" });

// exclude sections
request.ExcludeSections.Clear();
request.ExcludeSections.Add(new ResultSection() { Key = ResultSection.SectionType.DimensionalRange });

CalculatedPricing calculated_pricing = new PostOffice().CalculateServicePrice (request);
```