USPS Pricing Engine

.NET Software Development Kit (SDK)

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

4/1/2020
# 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 provided 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>
      </basicHttpBinding>
    </bindings>
    <behaviors>
      <endpointBehaviors>
        <behavior name="endpointCredentialBehavior">
          <clientCredentials>
            <clientCertificate
              storeLocation="LocalMachine"
              storeName="Root"
              x509FindType="FindByThumbprint"
              findValue="8858d68f41053dff6da7a1921c5a4a222f5536f8"/>
          </clientCredentials>
        </behavior>
      </endpointBehaviors>
    </behaviors>
  </bindings>
</system.serviceModel>
<clientCredentials/>
</behavior>
</endpointBehaviors>
</behaviors>
<br>
</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 fine 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 Kahala (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>
   </bindings>
</system.serviceModel>
<!-- 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>
        <!-- Kahala Standard version -->
        <behavior name="endpointCredentialBehavior">
            <clientCredentials>
                <clientCertificate
                    storeLocation="LocalMachine"
                    storeName="Root"
                    x509FindType="FindByThumbprint"
                    findValue="XXXXX" />
            </clientCredentials>
        </behavior>
    </endpointBehaviors>
    <!-- Kahala 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://lkahala-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/sdclnternationalPassthrough"
    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 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

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 similiar 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 similiar 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**


**Base Class**

ServicesRequest

**Properties**

Selections : CalculationSelections
IsExtraServiceConversational : bool

---

**CalculatedPricing Class**

**Namespace**


**Base Class**

None

**Properties**

Geography : Geography
Commitments : ServiceCommitmentCollection
Restrictions : MailingRestrictionCollection
Service : PostageService
Annotations : AnnotationCollection
Totals : PostagePriceCollection
Effective: DateTime
**CalculationSelections Class**

**Namespace**

**Base Class**
None

**Properties**
- MailServiceID : MailServiceID
- DeliveryOptionKey : string
- ExtraServices : ExtraServiceIDCollection

---

**ExtraServicesRequest Class**

**Namespace**

**Base Class**
None

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

---

**ExtraServicesWithPricing Class**

**Namespace**

**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**

**Base Class**
None

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

---

**MailingFeeCollection Class**

**Namespace**

**Base Class**
List<MailingFee>

**Properties**
None
**MailingFeeRequest Class**

**Namespace**

**Base Class**
None

**Properties**
- IDCard : IDCard
- FeeKeys : FeeKeyCollection
- QueryValue : decimal
- ShippingDateTime: DateTime

**MailingFeeRequest .FeeKey Class**

**Namespace**

**Base Class**
None

**Properties**
- Value : string

**MailingFeeRequest .FeeKeyCollection Class**

**Namespace**

**Base Class**
List<MailingFeeRequest .FeeKey>

**Properties**
None

**MailPieceAttributes Class**

**Namespace**

**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

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**

**Base Class**
None

**Properties**
IDCard : IDCard
MailPieceAttributes : MailPieceAttributes
ExcludeSections : ResultSectionCollection
ExtraServiceParameters : AdditionalInputValueCollection

---

**ServiceWithPricing Class**

**Namespace**

**Base Class**
None

**Properties**
Geography : Geography
Commitments : ServiceCommitmentCollection
Restrictions : MailingRestrictionCollection
Services : PostageServiceCollection
Annotations : AnnotationCollection
Effective: DateTime

---

**SKURequest Class**

**Namespace**

**Base Class**
None
Properties
IDCard : IDCard
SKU : string
ShippingDateTime : DateTime

SKUPrice Class

Namespace

Base Class
None

Properties
SKU : string
Price : decimal
PostageStatementSection : string
PostageStatementLine : int

SKUPriceCollection Class

Namespace

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*


*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

**GetMailingFees Method**

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

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
GetServiceCommitmentCities(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
Base Class
None

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

CalculationRequest Class

Namespace

Base Class
ServicesRequest

Properties
Selections : CalculationSelections
IsExtraServiceConversational : bool

CalculationSelections Class

Namespace

Base Class
None

Properties
MailServiceID : MailServiceID
DeliveryOptionKey : string
ExtraServices : ExtraServiceIDCollection

Geography Class

Namespace

Base Class
None
Properties
ID : CountryID
Name : string
Code : string
Number : string

ExtraServicesRequest Class

Namespace

Base Class
None

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

ExtraServicesWithPricing Class

Namespace

Base Class
None

Properties
ExtraServices : ExtraPostageServiceCollection
Annotations : AnnotationCollection
Effective: DateTime

MailingFee Class

Namespace

Base Class
None
Properties
Cost : decimal
FeeKey : string
Price : decimal
ValueKey : string
ValueKeyLowerLimit : decimal
ValueKeyUpperLimit : decimal
Effective : DateTime

MailingFeeCollection Class

Namespace

Base Class
List<MailingFee>

Properties
None

MailingFeeRequest Class

Namespace

Base Class
None

Properties
IDCard : IDCard
FeeKeys : FeeKeyCollection
QueryValue : decimal
ShippingDateTime: DateTime

MailingFeeRequest.FeeKey Class

Namespace

Base Class
None

Properties
Value : string
**MailingFeeRequest.FeeKeyCollection Class**

*Namespace*

*Base Class*
List<MailingFeeRequest.FeeKey>

*Properties*
None

---

**MailPieceAttributes Class**

*Namespace*

*Base Class*
None

*Properties*
Origin : LocationAttributes
Destination : LocationAttributes
ShippingDateTime : DateTime
Dimensions : Dimensions
Weight : Weight
MailShapeAndSizes : MailShapeAndSizeCollection
MailPieceContents : MailPieceContentCollection

---

**MailPieceAttributes.LocationAttributes Class**

*Namespace*

*Base Class*
None

*Properties*
CountryID : CountryID
CountryName : string
CountryCode : string
CountryNumber : string
PostalCode : string
IsPOBox : bool
**ServicesRequest Class**

**Namespace**

**Base Class**
None

**Properties**
- IDCard : IDCard
- MailPieceAttributes : MailPieceAttributes
- ExcludeSections : ResultSectionCollection
- ExtraServiceParameters : AdditionalInputValueCollection

---

**ServicesWithPricing Class**

**Namespace**

**Base Class**
None

**Properties**
- Geography : Geography
- Commitments : ServiceCommitmentCollection
- Services : PostageServiceCollection
- Regulations : CountryRegulation
- GXGLocations : GXGLocationCollection
- Annotations : AnnotationCollection
- Errors : PricingEngineErrorCollection
- Effective : DateTime

---

**SKURequest Class**

**Namespace**

**Base Class**
None

**Properties**
- IDCard : IDCard
- SKU : string
- ShippingDateTime : DateTime
**SKUPrice Class**

**Namespace**

**Base Class**
None

**Properties**
SKU : string
Price : decimal
PostageStatementSection : string
PostageStatementLine : int

---

**SKUPriceCollection Class**

**Namespace**

**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

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

Base Class
None

Properties
Alias : string

---

**CountryAliasCollection Class**

Namespace

Base Class
List<CountryAlias>

Properties
None

---

**CountryCollection Class**

Namespace

Base Class
List<Country>

Properties
None

---

**CountryID Structure**

Namespace

Base Class
None

Properties
Value : int
**CountryInformation Class**

**Namespace**

**Base Class**
List<CountryInformationItem>

**Properties**
None

---

**CountryInformationItem Class**

**Namespace**

**Base Class**
None

**Properties**
CountryToMailService : CountryToMailService
CountryToExtraServices : CountryToExtraServiceCollection
Price : decimal
OnlinePrice : decimal
CommercialPlusPrice : decimal

---

**CountryRegulation Class**

**Namespace**

**Base Class**
None

**Properties**
Country : Country
Prohibitions : string
Restrictions : string
Observations : string
CustomsForms : string
ExpressMailRegulations : string
ExpressMailNote : string
AdditionalRestrictions : string
CountryRegulationCollection Class

Namespace

Base Class
List<CountryRegulation>

Properties
None

CountryToMailService Class

Namespace

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

Base Class
None

Properties
ServiceTitle : string
ExtraServiceID : ExtraServiceID
IsAvailable : bool
Price : decimal
OnlinePrice : decimal
**CountryToExtraServiceCollection Class**

*Namespace*

*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.Usps.RateEngine.Entity

**Base Class**
None

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

---

**ExtraPostageService.AdditionalInput Class**

**Namespace**
ManTech.Usps.RateEngine.Entity

**Base Class**
None

**Properties**
Key : string
Min : decimal
Max : decimal

---

**ExtraPostageService.AdditionalInputCollection Class**

**Namespace**
ManTech.Usps.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

Base Class
None

Properties
LocationName : string
Street : string
City : string
State : string
ZipCode ZipCode :
WeekdayCutOff : string
SaturdayCutOff : string

GXGLocationCollection Class

Namespace

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

**TypeEnum** 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

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**

**Base Class**
None

**Properties**
Key : string
Value : string

---

**PriceGroupCollection Class**

**Namespace**

**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**

Unknown
CountryRegulations
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 NAME SPACE**

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

Base Class
ServiceCommitment

Properties
None

ServiceCommitment Class

Namespace

Base Class

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

ServiceCommitmentCollection Class

Namespace

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.Usps.RateEngine.CustomsForms.Entity

Base Class
List<CustomsForm>

Properties
None

CustomsForm Class

Namespace
ManTech.Usps.RateEngine.CustomsForms.Entity

Base Class
None

Properties
FormName : TextWithLinks
Condition : TextWithLinks
Notes : TextWithLinks
ChildCustomsForms : CustomsFormCollection

CustomsFormMailProperties Class

Namespace
ManTech.Usps.RateEngine.CustomsForms.Entity

Base Class
None

Properties
IsDocument : bool?
IsPotentiallyDutiable : bool?
IsGreaterThan3_4Thick : bool?
IsUniformlyThick : bool?
CountryID : CountryID
OriginZipCode : 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

<table>
<thead>
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<th>Field Name</th>
<th>Code</th>
<th>Description</th>
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<td>Shape Sub</td>
<td>0…</td>
<td>Shape sub version 0 to number of</td>
</tr>
<tr>
<td>5</td>
<td>Delivery Type</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>S</td>
<td>Sunday/Holiday</td>
</tr>
<tr>
<td></td>
<td></td>
<td>H</td>
<td>Hold For Pickup</td>
</tr>
<tr>
<td>6</td>
<td>Delivery Time</td>
<td>X</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>AM</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P</td>
<td>PM</td>
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</table>

Extra Service Group Codes

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

#### Domestic

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MailEntry</td>
<td>The Mail Entry type</td>
</tr>
<tr>
<td>Sort</td>
<td>The Sortation</td>
</tr>
<tr>
<td>DimensionalWeightR</td>
<td>The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Retail Price.</td>
</tr>
<tr>
<td>DimensionalWeightCB</td>
<td>The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Commercial Base Price.</td>
</tr>
<tr>
<td>DimensionalWeightCP</td>
<td>The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Commercial Plus Price.</td>
</tr>
<tr>
<td>DimensionalWeightNA</td>
<td>The Dimensional Weight. Returned when the Dimensional Weight is used in the calculation of the Price and the Price Type is Not Applicable.</td>
</tr>
</tbody>
</table>

#### International

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IncludedIndemnity</td>
<td>The included Insurance Indemnity for the mail service / weight.</td>
</tr>
<tr>
<td>DeclaredValueSDR</td>
<td>The value with the Special Drawing Right applied to the declare value.</td>
</tr>
<tr>
<td>IncludedNonnegotiableDoc</td>
<td>The Included Insurance amount when the mail piece contains only Nonnegotiable Document(s).</td>
</tr>
<tr>
<td>IncludedMerchandise</td>
<td>The Included Insurance amount when the mail piece contains Merchandise.</td>
</tr>
<tr>
<td>ECOMPRO</td>
<td>Set to True or False to indicate that Priority Mail International mail service is or is not ECOMPRO.</td>
</tr>
<tr>
<td>UPUXITType</td>
<td>Indicator if the block information is for a Logistics Partner or Post. See the Web Service UPUXIT SDC Spec</td>
</tr>
<tr>
<td>UPUXITCode</td>
<td>The Logistics Partner code that will support international transportation.</td>
</tr>
<tr>
<td>UPUXITBarcodeTypes</td>
<td>The barcode(s) that a Logistics Partner will support for international transportation. A commas delimited list of Barcodes. i.e. S10,W12</td>
</tr>
</tbody>
</table>
## Content Keys

### Domestic

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LiveAnimals</td>
<td>The mail piece content is a Live Animal(s). Equivalent to Special Handling - Live Animal Transportation</td>
</tr>
<tr>
<td>DayOldPoultry</td>
<td>The mail piece content is a Live Animal(s) that is Day Old Poultry.</td>
</tr>
<tr>
<td>Hazmat</td>
<td>The mail piece content is Hazmat. Equivalent to Special Handling - Hazardous Material Transportation</td>
</tr>
<tr>
<td>GroundTransportation</td>
<td>The mail piece requires Ground Transportation.</td>
</tr>
<tr>
<td>Nonmachinable</td>
<td>The mail piece is Not Machinable.</td>
</tr>
<tr>
<td>CrematedRemains</td>
<td>The mail piece content is Cremated Remains Equivalent to Special Handling - Cremated Remains</td>
</tr>
<tr>
<td>Perishables</td>
<td>The mail piece content is Perishable. Equivalent to Special Handling - Perishables</td>
</tr>
<tr>
<td>Fragile</td>
<td>The mail piece content is Fragile Equivalent to Special Handling – Fragile</td>
</tr>
<tr>
<td>NonnegotiableDocument</td>
<td>The mail piece contains only Nonnegotiable Document(s).</td>
</tr>
</tbody>
</table>

### International

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonmachinable</td>
<td>The mail piece is Not Machinable.</td>
</tr>
<tr>
<td>CrematedRemains</td>
<td>The mail piece contents Cremated Remains</td>
</tr>
<tr>
<td>NonnegotiableDocument</td>
<td>The mail piece contains only Nonnegotiable Document(s).</td>
</tr>
<tr>
<td>MedicalSupplies</td>
<td>The mail piece contains medical supplies</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>The mail piece contains pharmaceutical supplies</td>
</tr>
</tbody>
</table>

*Note: Content Keys are subject to change.*

### Price Detail Keys

#### Domestic

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA</td>
<td>Live Animal Fee</td>
</tr>
<tr>
<td>S</td>
<td>Sunday/Holiday Fee</td>
</tr>
<tr>
<td>A</td>
<td>10:30 AM Delivery Fee</td>
</tr>
<tr>
<td>NM</td>
<td>Nonmachinable Fee</td>
</tr>
<tr>
<td>X</td>
<td>Base Price</td>
</tr>
<tr>
<td>F</td>
<td>Fragile Fee</td>
</tr>
</tbody>
</table>

#### International

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Price Group Keys

### International

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NM</td>
<td>Nonmachinable Fee</td>
</tr>
<tr>
<td>X</td>
<td>Base Price</td>
</tr>
</tbody>
</table>

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

**Domestic**

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

*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);
**CalculateServicePrice**

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.DimensionalRange });

CalculatedPricing calculated_pricing = new PostOffice().CalculateServicePrice(request);
International Pricing Engine

**GETSERVICEWITHPRICING**

```csharp
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);
```
**CalculateServicePrice**

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.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);