

Spot Quote Version 2

API Developer's Guide

Roadrunner Transportation Systems, Inc.

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Spot Quote API Overview

The Spot Quote API allows customers to acquire a detailed quote for shipping freight with accessorials through Roadrunner Transportation Systems (RRTS).

The API can be accessed at

<http://webservices.rrts.com/SpotQuoteV2>

There are two operations available:

- **View Accessorials** - Receive a detailed list of accessorials available for shipments sent through RRTS.
- **Request Spot Quote** - Send shipment information and receive Spot Quote in return.

Authentication

Authentication for the API is performed using Basic Authentication in the request headers. The request header must be formatted as follows:

Authorization: Basic [encoded credentials]

Where “[encoded credentials]” is the base64 encoding of a credentials string consisting of username, followed by a colon, followed finally by password.

Format

Requests and responses are both processed in the JSON format.

API Endpoints

View Accessorials

Description	Returns a detailed list of the accessorials that can be requested for a shipment sent through RRTS.
Verb	GET
URI	http://webservices.rts.com/SpotQuoteV2/api/Accessorials
Endpoint	api/Accessorials

Example Response JSON

```
[
  {
    "Code": "AHD",
    "Description": "APARTMENT SITE DELIVERY",
    "PiecesRequired": false
  },
  {
    "Code": "AHP",
    "Description": "APARTMENT SITE PICKUP",
    "PiecesRequired": false
  },
  {
    "Code": "AID",
    "Description": "AIRPORT SITE DELIVERY",
    "PiecesRequired": false
  }
]
```

Accessorial

Property	Type	Optional	Notes
CD	String		Code to identify the accessorial.
Description	String		
PiecesRequired	Boolean		If true, the accessorial requires that a piece count be specified when including this accessorial in a Spot Quote Request.

Request Spot Quote

Description	Send shipment information. Receive a detailed Spot Quote.
Verb	POST
URI	http://webservices.rrts.com/SpotQuoteV2/api/SpotQuote
Endpoint	api/SpotQuote

Example Request JSON

```
{
  "OriginPostalCode": "60601",
  "DestinationPostalCode": "90210",
  "ShipmentDetails":
  [
    {
      "Weight": 10000,
      "Class": 0,
      "LinearFt": 0,
      "UnitCount": 3,
      "PackageType": "Loose",
      "CubicFt": 150,
      "Density": 23,
      "Dimensions":
      {
        "Length": 0,
```

```

        "Width": 0,
        "Height": 0
      }
    ],
    "ShipmentAccessorials":
    [
      {
        "CD": "LGD"
      },
      {
        "CD": "SRT",
        "PieceCount": "10"
      }
    ],
    "Comment": "A comment is here."
  }

```

Shipment

Property	Type	Optional	Notes
OriginPostalCode	String		5 digit postal code for shipment origin.
DestinationPostalCode	String		5 digit postal code for shipment destination.
ShipmentDetails	ShipmentDetail[]		List of Shipment Detail objects. 1 or more is required.
ShipmentAccessorials	ShipmentAccessorial[]	✓	List of Shipment Accessorial objects.
Comment	String	✓	

Shipment Detail

Property	Type	Optional	Notes
Weight	Int		Weight in lbs. Applied per handling unit.
Dimensions	Shipment Detail Dimensions	See Note	If supplied, Dimensions are used to calculate CubicFt, Density, and LinearFt. Otherwise, the value for Length, Width, and Height will be set to 0. Applied per handling unit.
CubicFt	Decimal	See Note	If provided, and Dimensions are not provided, CubicFt used to calculate Density and estimate LinearFt. Class is set to "Unknown". Applied per handling unit.
Density	Decimal	See Note	If provided and Dimensions and CubicFt are not provided, Density is used to calculate CubicFt and estimate LinearFt. Class is set to "Unknown". Applied per handling unit.
LinearFt	Decimal	See Note	If provided and Dimensions, CubicFt, and Density are not provided, LinearFt is used to estimate CubicFt and calculate Density. Class is set to "Unknown". Applied per handling unit.
Class	Decimal	See Note	If Dimensions, CubicFt, Density, and LinearFt are not provided, Class is used to calculate Density, and estimate CubicFt and LinearFt. See Appendix B for accepted Class values. Applied per handling unit.
PackageType	String		Specify between "Loose" or "Pallets". See Appendix A.
UnitCount	Int		For items with a packaging type of "Loose", signifies pieces. Signifies handling units for items with package type "Pallets".

Note: For each Shipment Detail item, multiple volume formats can be supplied. For example both Linear Ft and Cubic Ft can be supplied for a Shipment Detail. The API will determine which volume to use based on the following:

1. If the customer has a preferred volume type, all other formats for entering volume will be ignored. For example, if the customer with the account number "12345" has a volume preference set for "LinearFt", Linear Ft must be supplied for Shipment Details for that customer. If Cubic Ft, Dimensions, Class, and Density are supplied they will be ignored. If a preferred method is desired, please see your account representative.
2. If the customer does not have a preferred volume type, the API will determine which volume to use in the following order:
 - Dimensions
 - Cubic Feet
 - Density
 - Linear Ft.
 - Class

Shipment Detail Dimensions

Property	Type	Notes
Length	Int	Item length in inches .
Width	Int	Item width in inches .
Height	Int	Item height in inches .

Shipment Accessorial

Property	Type	Optional	Notes
CD	String		Code to identify the accessorial. Please see the "View Accessorials" section for more information on available codes.
PieceCount	Int	✓	Number of pieces affected by the accessorial. Some accessorial codes require a piece count to be supplied. Accessorials requiring piece count are indicated in the list returned by the "View Accessorials" endpoint.

Example Response JSON

```
{
  "QuoteNbr": 12345,
  "LineHaulPrice": 500.50,
  "FuelPrice": 150.00,
  "AccessorialPrice": 300,
  "QuoteTotal": 950.50,
  "OriginPostalCode": "60601",
  "DestinationPostalCode": "90210",
  "CustomerAcctNbr": 00000,
  "CustomerName": "NumberOneCustomer",
  "Comment": "A comment here.",
  "CreatedDate": "2019-04-16T17:52:51.5413116",
  "ExpirationDate": "2019-04-17T17:52:51.5413116",
  "TransitDays": 4,
  "ShipmentDetails": [
    {
      "Weight": 10000,
      "UnitCount": 3,
      "CubicFt": 150,
      "LinearFt": 0,
      "Density": 66.6,
      "Class": 0,
      "Dimensions": {
        "Length": 0,
        "Width": 0,
        "Height": 0
      },
      "PackageType": "Loose"
    }
  ],
  "ShipmentAccessorial": [
    {
      "CD": "LGD",
      "Name": "LIFTGATE DELIVERY CHARGE",
      "Charges": 200
    },
    {
      "CD": "SRT",
      "Name": "SORT & SEGREGATE CHARGE",

```

```

    "Charges": 20
  },
  {
    "CD": "CAD",
    "Name": "CA COMPLIANCE SURCHARGE DEST",
    "Charges": 9.75
  }
],
"Instructions": "You can call the Origin Service Center to schedule a pickup."
}

```

Quote Response

Property	Type	Optional	Notes
QuoteNbr	Integer		Unique reference number. Must be supplied when creating a BOL for this quote.
LineHaulPrice	Decimal		Base LTL charge for the quoted freight.
FuelPrice	Decimal		Fuel surcharge.
AccessorialPrice	Decimal		Sum of all accessorial charges for the shipment.
QuoteTotal	Decimal		Sum of all charges.
OriginPostalCode	String		5 digit US postal code.
DestinationPostalCode	String		5 digit US postal code.
CustomerAcctNbr	Integer		Account number for Spot Quote Customer
CustomerName	String		Name of Customer Company
Comment	String		
CreatedDate	String (DateTime)		String representing a date time object, in UTC.
ExpirationDate	String (DateTime)		String representing a date time object, in UTC.
TransitDays	Integer		Estimated business days.
ShipmentDetails	ShipmentDetail[]		List of Shipment Detail objects
ShipmentAccessorial	ShipmentAccessorial[]		List of Shipment Accessorial objects. Depending on shipment details, some accessorials are required. The required accessorials, while not included in the request, will be returned in the response.
Instructions	String		Instructions regarding scheduling a pickup.

Shipment Detail (Response)

Property	Type	Notes
Weight	Integer	
Dimensions	Shipment Detail Dimensions	If Dimensions were supplied, return supplied dimensions. Otherwise, returns 0 for length, width, and height.
CubicFt	Decimal	If CubicFt was supplied, returns supplied CubicFt. Otherwise, return CubicFt calculated from Dimensions, Density, LinearFt, or Class. See note.
Density	Decimal	Returns Density if Density was supplied. If Dimensions or CubicFt were supplied, returns value calculated from Weight and Dimensions or Cubic Ft. Otherwise, returns Density estimated based on LinearFt or Class. See note.
LinearFt	Decimal	Returns LinearFt, if supplied. Otherwise, if Dimensions, CubicFt, or Density were supplied, returns estimated LinearFt. Otherwise returns estimated LinearFt. based on Class. See note.
Class	Decimal	Returns the supplied Class, or 0 ("Unknown") if class was not supplied. See Appendix B. See note.
PackageType	String	"Loose" or "Pallets". See Appendix A.
UnitCount	Int	
CharacteristicLevel	Int	(Included in response only) 1 - indicates that weight and volume are applied per handling unit. 2 - indicates that weight and volume are applied per shipment detail. Shipment Details for all Version 2 quotes will have a characteristic level of 2.

Note: fields marked in grey are dependent on each other.

Shipment Detail Dimensions (Response)

Property	Type	Notes
Length	Int	Item length in inches .
Width	Int	Item width in inches .
Height	Int	Item height in inches .

Shipment Accessorial (Response)

Property	Type	Notes
CD	String	Code to identify accessorial selected. Please see the "View Accessorials" section for more information on the codes available.
Name	String	Descriptive accessorial name.
Charges	Decimal	Charges specific to this accessorial. Sum of these charges is used in calculating the total "AccessorialPrice" for the shipment.

Spot Quote Request Error Reference

The following error reference is provided to assist with troubleshooting errors that may occur when requesting a spot quote.

Type	Message	Code	Notes
JSON Formatting			
	"Request is invalid."	400	The JSON for the request is not formatted correctly. Please check for missing properties, incorrect property names, or invalid JSON syntax.
Customer Information			
	Customer with account number {account here} not found.	404	Information for the username or account request could not be found in the system.
Zip Code			
	"Origin Zip code is not a valid format."	400	Origin zip must be a 5 digit US postal code.
	"Destination zip code is not valid."	400	Destination zip must be a 5 digit US postal code.
	"Origin zip code is not in the standard pickup area."	400	
	"Destination zip code is not in the standard delivery area."	400	
	"Quote not available for Origin and Destination zip combination"	400	
Shipment Detail			
	At least one shipment detail item is required.	400	This error occurs when the request is submitted with no shipment details.
	Invalid package type.	400	This error occurs when the package type of one of the articles is set to a value other than "Pallets" or "Loose".
	Unit count must be greater than 0.	400	
	"Invalid number specified for class."	400	The number specified for freight class is not in the set of NMFC codes.

	"Negative values are not valid"	400	Density, Weight, LinearFt, Unit Count, and CubicFt must be greater than or equal to zero for all shipment details.
	Density, linear ft, cubic ft, dimensions, or class is required.	400	Every article in the shipment must have at least one of the following: density, linear ft, cubic ft, dimensions, or class.
	The shipment must meet a minimum weight of [weight in lbs] lbs or a minimum volume of [cubic feet] cubic feet.	400	If weight or volume is too low, gives information on the minimum weight / volume required for a quote.
	One of more shipment articles is missing weight.	400	
Shipment Detail Dimensions			
	Value must be supplied for length, width, and height.	400	Some, but not all dimensions were supplied for a shipment detail. For example, if only height were supplied, but width and length are 0, this error will occur.
	Shipment dimensions must be positive value.	400	Negative values were entered for length, width, or height.
	Height cannot exceed [maximum height] inches.	400	
	Width cannot exceed [maximum width] inches.	400	
Accessorial			
	"Shipment has duplicate accessorials."	400	The same accessorial code is specified more than once for this shipment. Please check to make sure no accessorials are repeated.
	"Accessorial has invalid code (CD)."	400	One or more of the accessorials codes specified does not exist in the list of available accessorials.
	"Some accessorials are missing piece count. (If using Sort and Segregate, please check piece count.)"	400	There is an accessorial requested that requires piece count, but the piece count is missing. Please check that all accessorials needing a piece count are supplied with one. To check which accessorials require a piece count, please use the "Accessorials" endpoint.
Min and Max			

Requirements			
	The shipment weight exceeds the maximum weight of [weight here] lbs.	400	
	The total calculated shipment volume exceeds the maximum cubic feet allowed [cubic feet here]. If you are shipping multiple items, please separate into multiple shipments and try again.	400	
Server			
	Error acquiring quote amount.	500	An error occurred while determining the quote total.
	Unable to generate new quote number.	500	An error occurred while creating the unique number for the quote.
	Error encountered while saving the Spot Quote.	500	An error occurred on the server while saving the quote information.
	Internal Server Error	500	An unspecified error occurred on the server. Please note your request information, account information, and request time, and report to the RRTS IT team.

References

Appendix A - Package Types

Valid package types are

- “Loose”
- “Pallets”

Appendix B - Freight Classes

ClassId	Description
0	Unknown
50	Class50
55	Class55
60	Class60
65	Class65
70	Class70
77.5	Class77.5
85	Class85
92.5	Class92.5
100	Class100
110	Class110
125	Class125
150	Class150
175	Class175
200	Class200
250	Class250
300	Class300
400	Class400
500	Class500