



DOTS FastTax

Developer's Guide

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Introduction

DOTS FastTax (referred to as FastTax or FT) is a publicly available XML web service that provides sales tax rate information for all US areas based on several different inputs. The service provides zip, city, county, county fips codes, state, tax rates and exemptions.

FastTax can provide instant sales tax rates for any address, zip code, city or county in the United States.

Web Service Structure

Web services are methods that integrate with other applications via the web, and encapsulate tricky business logic. Web services are too large of a topic to cover in this document, but Service Objects has developed its web services to be as easy to integrate and as accessible as possible.

FastTax is a public XML web service that supports SOAP, POST and GET operations. Note that SOAP is done via POST, only with special XML markup in the post-body.

The host path, or physical location of the web service is here:

<http://trial.serviceobjects.com/ft/FastTax.asmx>

The location of the WSDL, or Web Service Definition Language document, is here:

<http://trial.serviceobjects.com/ft/FastTax.asmx?WSDL>

(This is also accessible via the “Service Definition” link.)

This WSDL is the definition of the web service, meaning its inputs, outputs, operations, and the like. Most likely, you will have another tool read this WSDL and make the operations available to you in your application. Whenever your utilities or IDE asks for a WSDL path to FastTax, you can provide this one.

Every web service has *operations* that it offers to subscribers – methods that do different work and return different output. Examining the link above, you will notice several of these operations available, which are described in detail later on.

GetTaxInfoByZip_V2 – returns sales tax information for a given zip code. This is a newer version of GetTaxInfo and should be used instead of the older version. It can return multiple records in case the zip code bounds multiple cities or counties.

GetTaxInfo – returns sales tax information for a given zip code. This is a deprecated operation that returns the first tax record that it finds for a given zip code.

GetTaxInfoByCityCountyState – returns sales tax information for a given city/county/state combination. Returns one tax record.

GetTaxInfoByCityState – returns sales tax information for a given city/state combination. Can return multiple tax records in cases where the given city is bounded by multiple counties.

GetTaxInfoByAddress – returns sales tax information for a given address. Returns one tax record. Address validation is performed using DOTS Address Validation.

GetCanadianTaxInfoByProvince – returns sales tax information for a given Canadian province. All Canadian taxes are kept at the province level.

NOTE: For rates in Minnesota, please use `GetTaxInfoByZip_V2` or `GetTaxInfoByAddress`. Minnesota tracks tax rates differently from the rest of the states (they have zip code level rates). Getting rates based on city and county lookup operations will not necessarily return accurate results.

Operation Definitions

This document defines the input, output and behavior of the web service operations in FastTax. Each operation has its own unique behavior and output, although all of the operations are very similar and return almost identical output.

You should examine your own business needs first before exploring what FastTax can provide. Different operations may be necessary based on the information you have, and the granularity of data you need.

GetTaxInfoByZip_V2

This is the basic operation for finding sales tax rates in the United States. Given a US zip code and a tax type, it returns sales tax information for that zip code.

Several pieces of information are returned, starting with basic information about the area. Zip code, city, county, FIPS, and state are returned here.

Six tax rates are also returned. An overall rate that represents the combined sales tax rate for that area and the five tax rates it is based on. These five rates are the state rate, the city rate, the county rate, the county district rate and the city district rate.

Finally, a field representing any tax exemptions that might be available. Exemptions are normally kept at the state level and can consist of any combination of Labor, Freight and Services.

By examining the WSDL, you may see that the service can return multiple tax rates (multiple TaxInfo results). This is because at the zip code level, it is possible that there may be additional matches found. Zip codes can border multiple cities and counties and each might have a different tax rate. It is important to consider all of the results since any of them may be the correct one.

GetTaxInfoByZip_V2 Inputs

Name	Type	Values	Description
PostalCode	String	Varies	The zip code associated with the desired tax rates
TaxType	String	sales / use	Selects the type of tax to look for, for the given area.

LicenseKey	String	Varies	Your license key to use the service. Sign up for a free trial key at www.serviceobjects.com .
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GetTaxInfoByZip_V2 Outputs

Name	Type	Values	Description
Zip	String	Varies	The given zip code
City	String	Varies	The city associated with the given zip code
County	String	Varies	The county associated with the given zip code
CountyFIPS	String	Three digit number	The FIPS code associated with the zip code
StateName	String	Varies	The state associated with the give zip code
StateAbbreviation	String	Two letter state code	The common two letter state abbreviation
TotalTaxRate	String	Decimal digit	The decimal representation of the overall tax rate
TotalTaxExempt	String	Varies	The exemptions available for that area. Combinations of Labor/Freight/Services
StateRate	String	Decimal digit	The decimal representation of the state's tax rate
CityRate	String	Decimal digit	The decimal representation of the city's tax rate
CountyRate	String	Decimal digit	The decimal representation of the county's tax rate
CountyDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the county
CityDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the city
Error – Desc	String	Varies	If there was an internal web service error, the description will be displayed here.
Error – Number	String	"1", "2", "4"	See "Error Codes" below.
Error -- Location	String	Always null	Deprecated, no longer used.

GetTaxInfo

This is the basic operation for finding sales tax rates in the United States. Given a US zip code and a tax type, it returns sales tax information for that zip code.

This is a deprecated operation that only returns the first tax record it finds. This can cause a potential problem for zip codes that cross county and city borders as it is possible for multiple tax rates to exist. If you are looking for tax information via a zip code, it is highly recommended that you use `GetTaxInfoByZip_V2` instead of this operation.

It otherwise returns the exact same outputs as `GetTaxInfoByZip_V2`.

GetTaxInfo Inputs

Name	Type	Values	Description
PostalCode	String	Varies	The zip code associated with the desired tax rates
TaxType	String	sales / use	Selects the type of tax to look for, for the given area.
LicenseKey	String	Varies	Your license key to use the service. Sign up for a free trial key at www.serviceobjects.com .

GetTaxInfo Outputs

Name	Type	Values	Description
Zip	String	Varies	The given zip code
City	String	Varies	The city associated with the given zip code
County	String	Varies	The county associated with the given zip code
CountyFIPS	String	Three digit number	The FIPS code associated with the zip code
StateName	String	Varies	The state associated with the give zip code
StateAbbreviation	String	Two letter state code	The common two letter state abbreviation
TotalTaxRate	String	Decimal digit	The decimal representation of the overall tax rate
TotalTaxExempt	String	Varies	The exemptions available for that area. Combinations of Labor/Freight/Services

StateRate	String	Decimal digit	The decimal representation of the state's tax rate
CityRate	String	Decimal digit	The decimal representation of the city's tax rate
CountyRate	String	Decimal digit	The decimal representation of the county's tax rate
CountyDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the county
CityDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the city
Error – Desc	String	Varies	If there was an internal web service error, the description will be displayed here.
Error – Number	String	"1", "2", "4"	See "Error Codes" below.
Error -- Location	String	Always null	Deprecated, no longer used.

GetTaxInfoByCityCountyState

This operation returns a unique tax record given a city, county, state and tax type. It returns one record with the same data as the previous operations.

This operation is a good one to use if the county information is readily available.

DO NOT USE this operation for Minnesota rates though. Minnesota tracks rates by zip code and city and county rates might be different for each city/county based on the zip code.

GetTaxInfoByCityCountyState Inputs

Name	Type	Values	Description
City	String	Varies	A city name representing the city of the desired tax rate
County	String	Varies	A county name representing the county of the desired tax rate
State	String	Varies	The state name or abbreviation representing the state of the desired tax rate
TaxType	String	sales / use	Selects the type of tax to look for, for the given area.
LicenseKey	String	Varies	Your license key to use the service.

			Sign up for a free trial key at www.serviceobjects.com .
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GetTaxInfoByCityCountyState Outputs

Name	Type	Values	Description
Zip	String	Varies	The given zip code
City	String	Varies	The city associated with the given zip code
County	String	Varies	The county associated with the given zip code
CountyFIPS	String	Three digit number	The FIPS code associated with the zip code
StateName	String	Varies	The state associated with the give zip code
StateAbbreviation	String	Two letter state code	The common two letter state abbreviation
TotalTaxRate	String	Decimal digit	The decimal representation of the overall tax rate
TotalTaxExempt	String	Varies	The exemptions available for that area. Combinations of Labor/Freight/Services
StateRate	String	Decimal digit	The decimal representation of the state's tax rate
CityRate	String	Decimal digit	The decimal representation of the city's tax rate
CountyRate	String	Decimal digit	The decimal representation of the county's tax rate
CountyDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the county
CityDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the city
Error – Desc	String	Varies	If there was an internal web service error, the description will be displayed here.
Error – Number	String	"1", "2", "4"	See "Error Codes" below.
Error -- Location	String	Always null	Deprecated, no longer used.

GetTaxInfoByCityState

This operation returns a unique tax record given a city, state and tax type. It returns the exact same output as the previous operations.

This operation is a replacement for GetTaxInfoByCityCountyState if county information is not present. It would be good to use if only city and state are available but has a higher likelihood than any other operation of returning multiple records. If more precise information is available, such as zip code it would be recommended to use that.

DO NOT USE this operation for Minnesota rates. Minnesota tracks rates by zip code and city and county rates might be different for each city/county based on the zip code.

GetTaxInfoByCityState Inputs

Name	Type	Values	Description
City	String	Varies	A city name representing the city of the desired tax rate
State	String	Varies	The state name or abbreviation representing the state of the desired tax rate
TaxType	String	sales / use	Selects the type of tax to look for, for the given area.
LicenseKey	String	Varies	Your license key to use the service. Sign up for a free trial key at www.serviceobjects.com .

GetTaxInfoByCityState Outputs

Name	Type	Values	Description
Zip	String	Varies	The given zip code
City	String	Varies	The city associated with the given zip code
County	String	Varies	The county associated with the given zip code
CountyFIPS	String	Three digit number	The FIPS code associated with the zip code
StateName	String	Varies	The state associated with the give zip code
StateAbbreviation	String	Two letter state code	The common two letter state abbreviation
TotalTaxRate	String	Decimal digit	The decimal representation of

			the overall tax rate
TotalTaxExempt	String	Varies	The exemptions available for that area. Combinations of Labor/Freight/Services
StateRate	String	Decimal digit	The decimal representation of the state's tax rate
CityRate	String	Decimal digit	The decimal representation of the city's tax rate
CountyRate	String	Decimal digit	The decimal representation of the county's tax rate
CountyDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the county
CityDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the city
Error – Desc	String	Varies	If there was an internal web service error, the description will be displayed here.
Error – Number	String	"1", "2", "4"	See "Error Codes" below.
Error -- Location	String	Always null	Deprecated, no longer used.

GetTaxInfoByAddress

This operation returns a unique tax record given a full address (street, city, state and zip) and tax type. It returns the exact same output as the previous operations.

It uses DOTS Address Validation to correct and standardize given addresses. The tax rate is found from the city and county information returned. This operation does not return the validated and standardized address results, for that information, DOTS Address Validation should be used.

This operation returns the most precise tax information available but may fail in cases where the address is bad or excessively messy. It can be used in conjunction with other operations though if it fails.

GetTaxInfoByAddress Inputs

Name	Type	Values	Description
Address	String	Varies	A street and house number of the address
City	String	Varies	The city that the address belongs to
State	String	Varies	The state that the address belongs to

ZipCode	String	Varies	The zip code that the address belongs to
TaxType	String	sales / use	Selects the type of tax to look for, for the given area.
LicenseKey	String	Varies	Your license key to use the service. Sign up for a free trial key at www.serviceobjects.com .

GetTaxInfoByAddress Outputs

Name	Type	Values	Description
Zip	String	Varies	The given zip code
City	String	Varies	The city associated with the given zip code
County	String	Varies	The county associated with the given zip code
CountyFIPS	String	Three digit number	The FIPS code associated with the zip code
StateName	String	Varies	The state associated with the give zip code
StateAbbreviation	String	Two letter state code	The common two letter state abbreviation
TotalTaxRate	String	Decimal digit	The decimal representation of the overall tax rate
TotalTaxExempt	String	Varies	The exemptions available for that area. Combinations of Labor/Freight/Services
StateRate	String	Decimal digit	The decimal representation of the state's tax rate
CityRate	String	Decimal digit	The decimal representation of the city's tax rate
CountyRate	String	Decimal digit	The decimal representation of the county's tax rate
CountyDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the county
CityDistrictRate	String	Decimal digit	The decimal representation of any special district tax rates for the city
Error – Desc	String	Varies	If there was an internal web service error, the description will be displayed here.
Error – Number	String	"1", "2", "4"	See "Error Codes" below.
Error -- Location	String	Always null	Deprecated, no longer used.

GetCanadianTaxInfoByProvince

This operation should be used for any attempts to get Canadian tax information. Given a province name (or abbreviation), it returns sales tax information for that area.

All Canadian taxes are kept at the province level and easy to check. But this operation provides an easy report for anyone using DOTS Fast Tax. While simple, Canadian rates do change periodically making this operation more useful.

The outputs for Canadian Taxes are different from the previous operations. The full province name and its abbreviation are returned. In addition, there are three types of taxes returned for Canada. Provincial Sales Taxes (PST) are collected for most provinces. Goods and Services Tax (GST) is also applied in many cases. For a few provinces there is an alternative Harmonized Sales Tax (HST) which is a simplified blended version of PST and GST. In all cases, either HST or PST and GST apply (the other values will be 0 in each case).

Finally, there is a last flag (ApplyGSTFirst). If set to true - GST should be applied to the price of the item first and then PST should be applied to the combined total. If false - the taxes are applied individually to the normal cost of the item.

GetCanadianTaxInfoByProvince Inputs

Name	Type	Values	Description
Province	String	Varies	The full name or abbreviation of the province to get tax rates for
LicenseKey	String	Varies	Your license key to use the service. Sign up for a free trial key at www.serviceobjects.com .

GetCanadianTaxInfoByProvince Outputs

Name	Type	Values	Description
ProvinceName	String	Varies	The full province name.
ProvinceAbbreviation	String	Two letter prov. code	The provinces abbreviated name
GoodsSalesTax	String	Decimal digit	The value of the Goods and Services Tax for the province
ProvinceSalesTax	String	Decimal digit	The value of the Provincial Sales Tax for the province

HarmonizedSalesTax	String	Decimal digit	The value of the Harmonized sales tax for the province
ApplyGSTFirst	String	"True" or "False"	A flag that tells if GST should be applied to the price prior to calculating PST
Error – Desc	String	Varies	If there was an internal web service error, the description will be displayed here.
Error – Number	String	"1", "2", "4"	See "Error Codes" below.
Error -- Location	String	Always null	Deprecated, no longer used.

Error Codes

Error codes in DOTS FastTax are the same for all operations. They are as follows:

Error Code 1 – “Input cannot be less than zero length”

This error means the web service did not get any input. The connection to the service was made, and data was transferred, but no parameters were passed that the service could understand.

This error often happens when input is passed to the service with namespaces that the service does not understand. Applying a namespace to any of the parameters (such as zip code or county , in this service) will cause this error. Additionally, requests made in the “rpc/encoded” format will cause this error. The only namespace that should appear in any element is the [“http://www.serviceobjects.com”](http://www.serviceobjects.com) namespace on the root GetTaxInfoByZip_V2 element as so:

```
<TaxInfoMulti xmlns="http://www.serviceobjects.com/">
```

Note, however, that the namespace is not applied to the TaxInfoMulti element, it is only present.

Error Code 2 – Various descriptions

This error code appears when various errors occur, but are of the expected nature. Oftentimes, malformed or incomplete input will cause an error 2.

Error Code 4 – Various descriptions

An error code 4 is a fatal error and it means something has seriously gone wrong. You should never see an error code 4 in a live production environment.

Integration and FAQ

Integrating DOTS Fast Tax into your application should be easy and straightforward. If you are using a common platform, Service Objects may already have sample code built that you can use:

http://www.serviceobjects.com/support/dots_example_code.asp

However, if you are using a common platform that does not already have sample code, you can ask Service Objects to build you an example. Email support@serviceobjects.com for more details.

Which Operation Should You Use?

Picking which operation to use is likely most dependent on which pieces of input data you have and finding the operation that best fits that. All of the operations are roughly equivalent returning the same quality of data.

Typically, most users find the zip code operations to be the easiest to use as they have less room for error. Address and city/county operations may be more precise but by nature allow more potential errors to creep in. Addresses or city/county names that are grossly misspelled may lead to bad results.

Zip code searches generally work well every time but can potentially return extra tax records for zip codes that cross city and/or county borders, making them potentially more difficult to use.

The best suggestion is to try out each operation to find the data you need. In some cases where address or city/county searches do not work, zip code searches might work as a backup. Likewise, an address search could be useful as a backup on a zip code search that returned more records.

NOTE: If you have tax rates to look up in Minnesota though, you should not use an operation that does lookups based on city or county inputs. Minnesota tracks tax rates by zip codes and using a city or county will lead to inaccuracies. The best operations to use are zip code and address ones.

Why are there operations that end with a V2?

When we need to enhance our service that includes the changing of either the input or output interfaces, its best to create a new operation. If we change the interface of an existing operation, we potentially adversely affect hundreds of current customers.

If you are a new client or in a position to make a change, it is usually always best to switch to the new operation as it likely has important new enhancements.

What about restaurant, lodging and other taxes?

Currently, DOTS Fast Tax only supports general sales and use tax. There are no current plans to add other datasets/sources.

The Sample Code is Giving Strange Errors or is Crashing!

Most likely, the sample code cannot connect to Service Objects. Many environments will not allow you to connect out on port 80, or will clip out XML data from these requests/responses.

The easiest way to check for this is to open a browser on the machine running the sample code. In your browser, navigate to:

<http://trial.serviceobjects.com/ft/FastTax.aspx>

Then try to run one of the operations with your trial key. If you get a browser error, or get no data back, then the sample code isn't able to connect, either. Contact your systems administrator to resolve why you are not able to connect to Service Objects.

I'm Not a Programmer. How Do I Use DOTS FastTax?

Service Objects runs batches for you! A free batch trial is available at <http://www.serviceobjects.com/batch/signup1.asp>.

Conclusion

Service Objects is proud to offer you a free trial of DOTS FastTax.

Sign up today for a free trial at:

http://www.serviceobjects.com/products/dots_fasttax.asp

Other technical questions or concerns can be directed to support@serviceobjects.com.

If you are interested in purchasing DOTS FastTax, please contact sales@serviceobjects.com.

We welcome your feedback! Please do not hesitate to let us know what you think of our web services, documentation, or customer support.

www.serviceobjects.com