

How to Resolve Entities Using the D&B Direct 2.0 API for REST Developers

This guide will explain the steps involved in utilizing the D&B Direct API for locating D&B D-U-N-S Numbers for organizations.

Here is a checklist of the items needed to successfully resolve an entity:

Credentials (Sandbox, Trial or Production) Authentication Token Objective: Match, Cleanse or Both Input Parameters: Name, Address, Telephone Search Control Endpoint

Step 1. Obtaining Credentials

There are two methods for obtaining and activating API credentials for D&B Direct 2.0: self-service (Sandbox) or D&B issued (Trial/Production). For Sandbox (test environment) access, please complete the online form and an activation email will be delivered. For Trial or Production access, please contact a D&B sales representative.

More details: <http://developer.dnb.com/docs/2.0/common/obtaining-credentials>

Sandbox sign-up: <http://developer.dnb.com/register-v2>

Step 2. Authentication

D&B Direct API calls will require an unexpired authentication token, which is obtained via a POST call to the authentication service.

```
POST https://maxcvservices.dnb.com/rest/Authentication
x-dnb-user: MyUsername
x-dnb-pwd: MyPassword
```

A successful call to this service will return an authentication token that will be valid for eight hours.

```

HTTP/1.1 200 OK
Date: Wed, 09 Oct 2013 18:47:22 GMT
Authorization: <MyToken>
x-dnb-user: MyUsername
x-dnb-pwd: MyPassword

```

The authentication token should be retained and then submitted on subsequent API calls. Receiving a SC001 response code is an indication that the authentication token has expired. Applications should be written to detect this response code and request a new token before proceeding to make additional API requests.

More details: <http://developer.dnb.com/docs/2.0/common/authentication-process#REST>

Step 3. Selecting an Operation

D&B Direct provides three operations for resolving entities: On-Demand Entity Identification (a.k.a. Match), On-Demand Single Entity Resolution (a.k.a. Cleanse & Match), and On-Demand Address Cleanse & Update (a.k.a. Cleanse & Standardize). The cleansing process produces machine sortable mailing addresses.

	Match	Cleanse & Standardize	Cleanse & Match
Service	Company Service	Company Service	Company Service
Operation	Match()	CleanseAndStandardize()	GetCleanseMatch()
Performs Cleanse	No	Yes	Yes
Performs Search	Yes	No	Yes

Step 4a. Minimum Input - Cleanse

For cleansing, a primary address (building number and street name, post office box or rural route number) is required in combination with an organization name, city, state, country and postal code to meet one of the following conditions:

1. For locations within the United States: primary address plus either (a) state abbreviation and ZIP code, (b) city name and ZIP code, or (c) city name with state abbreviation.
2. For locations outside of the United States: country code, primary address plus either (a) state, province or prefecture name and postal code, (b) city name and postal code, or (c) city name with name of the state, province or prefecture.

Step 4b. Minimum Input - Search

There are multiple options for performing a search using the On-Demand Entity Identification and On-Demand Single Entity Resolution features. The following list explains the what parameters will be expected

by the D&B search engine for successful requests.

1. When submitting a request by **D-U-N-S Number**, a valid D-U-N-S Number is *Required*.
2. When submitting a request by **Registration Number**, a Registration Number and Country Code are *Required*. This search option is not available for the United States (including SBRI search) and Canada.
3. When submitting a request by **Telephone Number**, a Telephone Number and Country Code are *Required*.
4. When submitting a request by **Organization Name**, an Organization Name (or partial name) and Country Code are *Required*.
5. When submitting a request by **Address (United States and Canada)**, a street address, town, state/territory and Country Code are *Required*.
6. When submitting a request by **Address (all other countries)**, a street address, town, and Country Code are *Required*.

Including the building number on the street address will significantly improve the quality of the results.

Step 5. Search Control

The D&B search engine will analyze the Request Parameters provided and determine what type of search to perform. For example, if a D-U-N-S Number is specified, the operation will ignore all other parameters and perform a D-U-N-S Number search.

The following chart explains the logic that is applied to requests.

D-U-N-S Number	Registration Number	Telephone Number	Subject Name	Address	Service Behavior
Provided	Provided	Provided	Provided	Provided	Only D-U-N-S Number will be used for matching. All other parameters in the request (Organization Identification Number, Telephone Number, Subject Name and Address) will be ignored.
Not Provided	Provided	Provided	Provided	Provided	Only Organization Identification Number will be used for matching. All other parameters in the request (Telephone Number, Subject Name and Address) will be ignored.
Not Provided	Not Provided	Provided	Provided	Provided	First, match is performed based on telephone number. If candidates having confidence code more than four are found, those candidates are returned back in the response. If no candidates are found with confidence code more than four, then match is performed based on Subject Name and Address.
Not Provided	Not Provided	Not Provided	Provided	Provided	Both Subject Name and Address will be used for matching
Not Provided	Not Provided	Not Provided	Not Provided	Provided	Address will be used for matching

Step 6. Preparing the Endpoint

The endpoints for resolving entities are similar. The following table identifies the parameter which triggers each search operation.

	Match	Cleanse & Match	Cleanse & Standardize
Trigger	&match=true	&cleansematch=true	&cleanseandstandardize=true

Here is an example of a call to the On-Demand Single Entity Resolution operation for a fictitious company called Gorman Manufacturing based in California, U.S.A.:

```
GET https://maxcvservices.dnb.com/V4.0/organizations?organizations?TerritoryName=CA&CountryISOAlpha2Code=US&cleanseandstandardize=true&OrganizationName=Gorman%20Manufacturing
Authorization: <My Token>
```

These features do not support pagination; providing only a single set of results. Use the CandidateMaximumQuantity parameter to set the maximum number of results (up to 100 for certain countries), which has a default value of 25.

Successful service requests will return a CM000 response code. Otherwise, one of the D&B Direct standard response codes will be returned. Refer to the product page in the API Reference for a list of applicable response codes and their meanings.

API Reference: <http://developer.dnb.com/docs>

Step 7. Processing the JSON Response

The D&B Direct REST implementation uses the BadgerFish approach for JSON with some minor variations.

More details: <http://developer.dnb.com/docs/2.0/common/badgerfish>

Next Steps

This guide applies to the following service(s):

- Company Service

Please refer to the D&B Direct 2.0 API Reference documentation materials for additional details.

More details: <http://developer.dnb.com/docs/2.0>

Product Support

If you need assistance obtaining D&B Direct products, or have questions regarding the REST implementation of D&B Direct, please contact the D&B Direct Customer Support team at (866) 465-3829 or submit an online request for assistance.

Support form: <http://dnbus.force.com/support?prod=DNBDirect>

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