An Introduction to the D&B Direct 2.0 API for SOAP Developers

This guide is designed to provide an overview of the D&B Direct 2.0 API architecture, documentation and basic usage principles.

D&B Direct 2.0 is a complete replacement for the D&B Direct Sales & Marketing 1.x (currently 1.4) API, D&B Direct Supply Management 1.0 API, and D&B Data Integration Toolkit services.

Please note that some D&B Direct 2.0 API services do not currently provide a SOAP interface.

Basic Design

The D&B Direct 2.0 API is comprised of twenty-three services, which can be grouped into three broad categories: Products (including Reports), Features and Supporting (or ancillary functions).

Products

The product services deliver multiple data layers through a single OrderProduct() operation by passing a product code on the request.

The data layers deliver collections of business elements which map to data fields in the delivery package. Many of the product services require D-U-N-S Numbers that can be obtained using several of the search features.

Some Products offer options (i.e. Standard, Enhanced, Premium).

Features

A series of feature services provide multiple operations, many of which can perform different functions based on the request criteria. Several of these features perform entity identification and resolution functions that return D-U-N-S Numbers that can be used to request products and reports.

Supporting Services

There is a small collection of reference and utility services that can be used to supplement customer applications.

Product Canonical Model (PCM)

One of the key differences between D&B Direct 2.0 and its predecessor D&B Direct 1.x is the packaging of data fields in structured, hierarchical layouts. Many of these PCM elements have been normalized and may return multiple business elements (discernible by an attribute or related element).

Here is an Example for the business element "Disclaimer Text."

PCM XPATH displayed in documentation	Alternate method of displaying PCM Element (used by Monitoring)
OrderProductResponse. OrderProductResponseDetail. Product. Organization. Events. PublicFilingHeader. DisclaimerText	//Organization /Events /PublicFilingHeader /DisclaimerText

And here is what this field would look like in the XML response:

```
<OrderProductResponse>
  <OrderProductResponseDetail>
    <Product>
      <Organization>
        <Events>
          <PublicFilingHeader>
            <DisclaimerText>SOME VALUE</DisclaimerText>
          </PublicFilingHeader>
        </Events>
      </Organization>
    </Product>
  </OrderProductResponseDetail>
</OrderProductResponse>

{"OrderProductResponse": {
   "OrderProductResponseDetail":     {
      "Product":          {
         "Organization":              {
            "Events": {
              "PublicFilingHeader": {
                "DisclaimerText": "SOME VALUE"
            }
```

```
            }
        }
      }
    }
} }
```

Service Versions

Another unique attribute of the D&B Direct 2.0 API is that the individual services are also given versions. This allows for certain services to be upgraded, without impacting other services and/or the API version.

Technology

The D&B Direct 2.0 API SOAP interfaces accept and deliver information in XML format. The Batch Service also requires certain bulk requests to be provided in fully-quoted comma delimited format.

Documentation

The documentation is intended to be an API Reference, and is aligned around the design of the API to include Product (and Report), Feature, Service and Operation pages. Find out more...

Product Pages

These pages are intended to provide an overview of each product (or report) available from a given service. They describe the requirements and options for requesting the product, and include alphabetical lists of the business elements packaged in the product. The individual business elements are linked to the corresponding data fields (on the respective operation pages) in which they are delivered.

Many product pages also include expanded details, including explanations of scores and the components that they are derived from.

Feature Pages

Similar to product pages, these are more focused on the requirements and options, as most features return smaller sets of business elements. They are intended to provide non-technical explanations of the types of options available for calling the respective operation.

Service Pages

These pages provide general information about the service, a list of the operations (for feature services) or products (for product services), the endpoints, and WSDL's. These pages link to all related pages.

Operation Pages

For every operation in an service, SOAP and REST pages (where applicable) are available to provide the detailed input and output specifications, along with authentication instructions, the endpoint, sample requests, possible response codes, and instructions for downloading sample responses.

Master Index

The documentation includes a API Reference index that provides links to the materials using a variety of nomenclature. Legacy product names are included in the index for existing D&B customers who may not be familiar with product names used in the D&B Direct 2.0 API.

Index to API Reference: http://developer.dnb.com/docs/2.0/sitemap

Versioning

The API Reference is tightly aligned with the service versions, which is evident in both the folder structure (e.g. URL's) and breadcrumbs. Here is an example:

Assessment Service, Version 2.0 (API), **3.0** *(Service)*

Service page: http://developer.dnb.com/docs/2.0/assessment/**3.0**

Breadcrumb: D&B Direct» Documentation» Version 2.0» Assessment Product Service **3.0**

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

WSDL's

Downloadable WSDL files are available for each available version of a service, and links can be found on the corresponding Service and Operation pages.

> **Note:** Some WSDL's include operations and/or parameters that are NOT applicable to D&B Direct. Use the documentation to clarify/verify proper calling procedures.

Authentication

D&B Direct API services require that a valid username and password be provided in the SOAP header with each call to an operation. The 2.0 services do not require that an API key be supplied.

If the credentials are valid and the associated account is entitled to access the product or feature, the request will be processed. If the authentication process fails, an error response code will be returned. The security related response codes are prefixed with "SC."

Here is a sample:

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/enve
lope/" xmlns:com="http://services.dnb.com/CompanyServiceV2.0">
   <soapenv:Header>
      <wsse:Security soapenv:mustUnderstand="0" xmlns:wsse="http://do
cs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.
xsd" xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-w
ss-wssecurity-utility-1.0.xsd">
         <wsse:UsernameToken wsu:Id="UsernameToken-11">
            <wsse:Username>MyUsername</wsse:Username>
            <wsse:Password Type="http://docs.oasis-open.org/wss/2004/
01/oasis-200401-wss-username-token-profile-1.0#PasswordText">MyPasswo
rd</wsse:Password>
         </wsse:UsernameToken>
      </wsse:Security>
   </soapenv:Header>
   <soapenv:Body>
            <!--Request Body as per the service schema-->
   </soapenv:Body>
</soapenv:Envelope>
```

The D&B Direct 2.0 web service calls do not require an API key.

D-U-N-S Numbers

D-U-N-S Numbers unique 9-digit numbers that identify businesses on which a D&B Credit Report has been generated. The D&B Direct API includes several methods for locating D-U-N-S Numbers. In the event that you are unable to locate a D-U-N-S Number for a particular business, you may request that one be assigned using the Investigation Service.

When supplying a D-U-N-S Number to any of the D&B Direct products or features, do not include any dashes or spaces in the number.

D&B also includes information for small business that have not been assigned a D-U-N-S Number. Refer to the SBRI search of the On-Demand Entity Identification feature and the Small Business Risk Insight data layer for more details.

Trade Up Indicator

D&B maintains extensive relationship information between companies, and as a result, many of the products and reports include a "Trade Up" option that allows a D-U-N-S Number for a branch or subsidiary to be supplied, but to have information for the headquarters returned.

Company Principals

D&B also has information on key employees for organizations. Refer to the Search & Build-a-List - Contacts (Plus Email Lookup) feature and People data layer for more details.

Solutions

The developer.dnb.com web site includes a variety of use case scenarios, categorized by Finance, Operations, Marketing and Sales & Services. Each use case provides guidance as to which components of the D&B Direct 2.0 API is best suited to solve a particular business need. Please refer to the Solutions menu option on the developer.dnb.com home page.

Monitoring Changes

Want to know when the stock price of a company changes by more than 10%? Want to know when the corporate linkage for a company changes? D&B Direct 2.0 includes both product-level and field-level monitoring.

More details: http://developer.dnb.com/docs/2.0/monitoring/2.0/process

Compliance Screening

This solution allows organizations to identify banned or suspect entities (suppliers, partners, customers, etc.) and individuals, strengthen fraud protection, ensure regulatory compliance and manage supply and distribution risk.

More details: http://developer.dnb.com/docs/2.0/compliance/1.0/screening

Bulk Processing

Several D&B Direct 2.0 operations can be invoked using batch services allowing for up to 10,000 transactions to be issued with a single API call.

More details: http://developer.dnb.com/docs/2.0/batch/1.0

Additional Guides

For step-by-step instructions for several key D&B Direct 2.0 API functions (including ordering products, searching for companies), please refer to the How To guides page on the API documentation web site.

How To: http://developer.dnb.com/docs/2.0/guides

Dun & Bradstreet (D&B)
103 JFK Parkway
Short Hills, NJ 07078

www.dnb.com