



NIEM Web Services API

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Change History

No.	Date	Reference: All, Page, Table, Figure, Paragraph	A = Add. M = Mod. D = Del.	Revised By	Change Description
0.1	11/25/2009	All	A	Chris Lewis	Initial version
0.2	9/14/2011	Page 5	M	John Matthews	Added parameter
0.3	3/17/2013	Page 6	C	John Matthews	Removed conformance
0.4	06/01/2021		M	Peter Madruga	Enabled specifying a release in requests. Removed security requirement.

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1 Introduction

NIEM now offers access to some of the functionality that currently exists on the NIEM Web site through the use of SOAP Web Services. This will allow the ecosystem of NIEM tools and users to grow as more complex and useful features can be integrated into tools and make the lives of users easier. Consider these two use cases:

- A user may now write a program to generate subsets of NIEM by providing the wantlist to the web service and get back the generated subset, rather than manually generate a subset in the NIEM SSGT web application.
- A user may now write a program to access the Subset Generation Web Service to search for NIEM components through a custom user interface, rather than use the interface provided by the Subset Generation Tool.

NIEM now offers three different classes of queries through Web Services (more will likely be added in the future). Each class of query is described in more detail within this document. NIEM requires that all requests sent to the Web Service API be signed. The “Web Service Security” section details the requirements and process for signing your API requests.

2 Web Service Security

In prior versions of the NIEM API, there was a requirement to submit an X.509 certificate with each request sent to the API. As of this writing, there is no longer a requirement to submit an X.509 certificate with a request.

3 NIEM Web Services

The NIEM tool Web site currently exposes three Web Services:

- Search – accepts a query and returns the NIEM component or components matching the query.
- Subset Generation – accepts a wantlist and returns the subset schema for the given wantlist.
- Code List Generation – accepts a Microsoft Excel spreadsheet and returns a code list schema.

3.1 Search Web Service

The Web Services Description Language (WSDL) for the Search Web Service is located at:

<http://tools.niem.gov/niemtools/ws/search/search.wsdl>

This service has two separate queries: one to search for components and one to retrieve a specific component.

3.1.1 Search for Components

The search service has three input parameters:

1. Type - The type of component to search for: "Property", "Type", or "Namespace".
2. SearchString - The query you wish to search for, i.e. the name of the component.
3. Release (optional) – The NIEM release. If no release is specified, the API will use the current release as the default.

The service returns one element:

SearchResponse - A set of elements matching the type and the string from the query specified in the input.

The following is a sample call to the service:

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:nm="http://niem.gov/ws/schemas">
  <soapenv:Header/>
  <soapenv:Body>
    <nm:SearchRequest>
      <nm:Type>
        <nm:Value>Type</nm:Value>
      </nm:Type>
      <nm:SearchString>
        <nm:Value>Person</nm:Value>
      </nm:SearchString>
    </nm:SearchRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

```
        </nm:SearchString>
        <nm:Release>
            <nm:Value>4.2</nm:Value>
        </nm:Release>
    </nm:SearchRequest>
</soapenv:Body>
</soapenv:Envelope>
```

3.1.2 Retrieve a Component

Once a user knows what component he/she wants, a second query is available to retrieve that component.

The retrieval service has one input parameter:

ID - The qualified Name of the component to retrieve; e.g., "nc:Person".

The service returns one element.

GetElementResponse - The XML representation of the component the user chooses to retrieve.

The following is a sample call to the service:

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:nm="http://niem.gov/ws/schemas">
    <soapenv:Header/>
    <soapenv:Body>
        <nm:GetElementRequest>
            <nm:ID>
                <nm:Value>nc:Person</nm:Value>
            </nm:ID>
            <nm:Release>
                <nm:Value>4.2</nm:Value>
            </nm:Release>
        </nm:GetElementRequest>
    </soapenv:Body>
</soapenv:Envelope>
```

3.2 Subset Generation Web Service

The WSDL for the Subset Generation Web Service is located at:

<http://tools.niem.gov/niemtools/ws/schemagenerator/genschema.wsdl>

The service has three input parameters:

1. WantList - A base64 encoding of an XML Wantlist file
2. IncludeWantlist - A boolean to indicate whether to include the wantlist in the generated schema

3. **IncludeDocumentation** - A boolean to indicate whether to include the documentation in the generated schema

The service returns one element:

Response - A base64 encoding of the generated Subset

The following is a sample call to the service:

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:nm="http://niem.gov/ws/schemas">
  <soapenv:Header/>
  <soapenv:Body>
    <nm:GenerateSchemaRequest>
      <nm:WantList>
        <nm:DataFile>PD94bWwgdmVyc2l1vb210iMS4wIiBlbmNvZGluZz0iVVRGLTg
iPz4KPHc6V2FudExpc3QgdzpyZWxlYXNlPSIyLjAiIHc6cHJvZHVjdD0i
Tk1FTSIKICB4bWxuczphbnNpLW5pc3Q9Imh0dHA6Ly9uaWVtLmdvdi9ua
WVtL2Fuc2ktbmlzdC8yLjAiIHhtbG5zOnc9Imh0dHA6Ly9uaWVtLmdvdi
9uaWVtL3dhbnRsaXN0LzIiPgogIDx3OkVsZW11bnQgdzpuYW11PSJhbnN
pLW5pc3Q6RmFjZU1tYWdlRXllQ29sb3JBdHRyaWJ1dGUiIHc6aXNSZWZl
cmVuY2U9ImZhbnHN1Ii8+CjwvdzpxYW50TG1zdD4K</nm:DataFile>
      </nm:WantList>
      <nm:IncludeWantList>
        <nm:Value>True</nm:Value>
      </nm:IncludeWantList>
      <nm:IncludeDocumentation>
        <nm:Value>True</nm:Value>
      </nm:IncludeDocumentation>
    </nm:GenerateSchemaRequest>
  </soapenv:Body>
</soapenv:Envelope>
```

3.3 Code List Generation Web Service

The WSDL for Code List Generation Web Service can be found at:

<http://tools.niem.gov/niemtools/ws/codelistgenerator/gencodelist.wsdl>

The service has six input parameters:

1. **CodeList** - A base64 encoding of the Excel version of the code list
2. **Prefix** - The prefix of the namespace for the code list
3. **URI** - The URI of the namespace for the code list
4. **Location** - The relative path of the schema file to use in the returned zip
5. **Version** - The version of the namespace to use in the schema

6. Definition – The definition of the namespace to use in the schema

The service returns one element:

Response - A base64 encoding of the generated XML version of the code list

The following is a sample call to the service:

```
<soapenv:Envelope
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:nm="http://niem.gov/ws/schemas">
  <soapenv:Header/>
  <soapenv:Body>
    <nm:GenerateCodeListRequest>
      <nm:CodeList>
        <nm:DataFile>
          ** Replace this with Base64 Encoding of Code List here **
        </nm:DataFile>
      </nm:CodeList>
      <nm:Prefix>
        <nm:Value>test</nm:Value>
      </nm:Prefix>
      <nm:URI>
        <nm:Value>http://niem.gov/test/test</nm:Value>
      </nm:URI>
      <nm:Location>
        <nm:Value>local/codes/schema.xsd</nm:Value>
      </nm:Location>
      <nm:Version>
        <nm:Value>2</nm:Value>
      </nm:Version>
      <nm:Definition>
        <nm:Value>Our definition</nm:Value>
      </nm:Definition>
    </nm:GenerateCodeListRequest>
  </soapenv:Body>
</soapenv:Envelope>
```