

LexEVS 6.x CTS2 API Quick Start

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CTS2 Client Quick Start

Currently Hosted Service

<http://lexevscts2.nci.nih.gov/lexevscts2>

Use this as a base URL for queries. (Not all services are hosted at this URL)

Example calls to CTS2 using the base URL:

- <https://lexevscts2.nci.nih.gov/lexevscts2/service>
- <https://lexevscts2.nci.nih.gov/lexevscts2/codesystemversions>

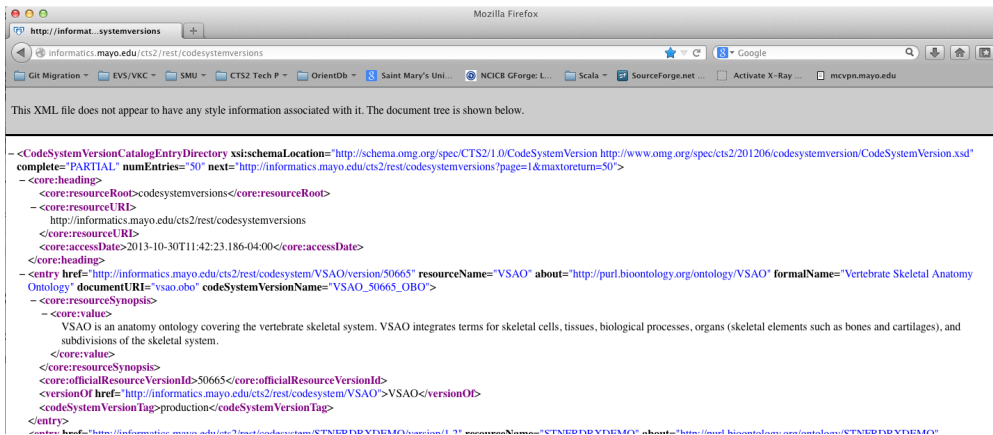
CTS2 Client Options

REST calls are not platform specific. They can be integrated into a wide variety of platforms.

- Browser
- Java
- Scala
- Python
- JavaScript
- Unix Command line
- Any platform able to handle REST calls and XML or JSON formatted responses

Browser

Any browser window is a REST client. A user can type in the REST command and view the resulting XML/JSON. Click on image to expand:



Java

Prerequisite: Java 1.8

Java REST example

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.MalformedURLException;
import java.net.ProtocolException;
import java.net.URL;

/**
 * Created with IntelliJ IDEA.
 */
public class ValueSetClient {

    public void getValueSets(){
        String uri =
            "http://lexevscts2.nci.nih.gov/lexevscts2/valuesets";

        URL url;
        try {
            url = new URL(uri);

            HttpURLConnection connection =
                (HttpURLConnection) url.openConnection();
            if (connection.getResponseCode() != 200) {
                throw new RuntimeException("Failed : The HTTP error code is : "
                    + connection.getResponseCode());
            }
            BufferedReader br = new BufferedReader(new InputStreamReader(
                (connection.getInputStream())));

            String output;
            System.out.println("Output from Server .... \n");
            while ((output = br.readLine()) != null) {
                System.out.println(output);
            }

            connection.disconnect();

        } catch (MalformedURLException e) {
            e.printStackTrace();
        } catch (ProtocolException e) {
            e.printStackTrace();
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

```

public void getValueSet(){
    String uri =
        "http://lexevscts2.nci.nih.gov/lexevscts2/valuesets?matchvalue=Sequence&format=json";
    URL url;
    HttpURLConnection connection = null;
    try {
        url = new URL(uri);

        connection = (HttpURLConnection) url.openConnection();
        connection.setRequestProperty("Accept", "text/json");
        if (connection.getResponseCode() != 200) {
            throw new RuntimeException("Failed : The HTTP error code is : "
                + connection.getResponseCode());
        }
        BufferedReader br = new BufferedReader(new InputStreamReader(
            (connection.getInputStream())));

        String output;
        System.out.println("\nOutput from CTS2 Service .... \n");
        while ((output = br.readLine()) != null) {
            System.out.println(output);
        }

    } catch (MalformedURLException e) {
        e.printStackTrace();
    } catch (ProtocolException e) {
        e.printStackTrace();
    } catch (IOException e) {
        e.printStackTrace();
    } finally {
        if(connection != null){
            connection.disconnect();
        }
    }
}

public static void main(String[] args){

    ValueSetClient client = new ValueSetClient();
    client.getValueSets();
    client.getValueSet();

}
}

```

Scala

We recommend using the free community edition of [IntelliJ](#) . Download and install the Scala plugin according to the directions. Then follow instructions for creating a Scala project and an object like the following. Change the URL to whatever CTS2 service is available.

Scala REST Example

```
package mayo.edu.cts2.client.rest.scala

import java.net.{URLConnection, URL}
import io.Source

/**
 * Created with IntelliJ IDEA.
 */
object CTS2RestClient extends App{
  val connection =
    new URL("http://http://lexevscts2.nci.nih.gov/lexevscts2/valuesets").openConnection().asInstanceOf[URLConnection]
  val inputStream = connection.getInputStream
  val src = Source.fromInputStream(inputStream)
  src.getLines().foreach(println)
}
```

Python

Install Python on your system. Create a text file with the .py extension and run with the "python myrestclient.py" command.

Simple Python Rest Client

```
__author__ = 'sbauer'
import urllib2

try:
    file = urllib2.urlopen('http://lexevscts2.nci.nih.gov/lexevscts2/resolvedvaluesets')
except urllib2.URLError, e:
    if e.code == 404:
        print("check url")
    # continue to handle other errors here
else:
    print(file.read())
```

Three code snippets that can stand alone. Two return XML and one returns JSON. Python must be installed on your system. Download the third party library [python-rest-client](#). Add python-rest-client to the PYTHONPATH environment variable to your system. Create a python script file and run as above.

Python REST Client

```
__author__ = 'sbauer'
from restful_lib import Connection

conn = Connection("http://http://lexevscts2.nci.nih.gov/lexevscts2")
reply = conn.request_get("/valuesets")
if reply['headers']['status'] == '200':
    print reply['body']

conn = Connection("http://http://lexevscts2.nci.nih.gov/lexevscts2")
reply = conn.request_get("/valuesets?format=json", headers={'Accept': 'application/json;q=1.0'})
if reply['headers']['status'] == '200':
    print reply['body']
    print eval(reply['body'])

conn = Connection("http://http://lexevscts2.nci.nih.gov/lexevscts2")
print conn.request_get("/valuesets?matchvalue='Sequence')["body"]
```

Unix Command Line

returns XML that can be piped to a file

Shell Script using Unix curl command

```
$ curl http://lexevscts2.nci.nih.gov/lexevscts2/codesystemversions
```

Java Serialization using the CTS2 Framework

CTS2 Framework Serialization snippet

A reference implementation framework in Java includes parsing and marshaling utilities as well as CTS2 model elements in Java to serialize the JSON responses. For example:

```
JsonConverter converter = new JsonConverter();
ResolvedValueSetDirectory valuesetdir = converter.fromJson(
    <JSON>, ResolvedValueSetDirectory.class);
```

Getting the Framework



Hint

You may have handshake errors running maven against the new SSL enabled repository URL. If so try adjusting Maven Options as follows:

```
export MAVEN_OPTS="-Dhttps.protocols=TLSv1.1,TLSv1.2 -Dforce.http.jre.executor=true -Xmx3072m -XX:
MaxPermSize=752m"
```

The CTS2 Framework and its dependencies are easily pulled in to your Java project via maven using the following elements in the pom.xml file:

```
<repository>
  <id>nci.maven.releases</id>
  <name>NCI Maven Release Repository</name>
  <url>https://ncimvn.nci.nih.gov/nexus/content/repositories/LexEVSRelease</url>
</repository>

<dependency>
  <groupId>edu.mayo.cts2.framework</groupId>
  <artifactId>cts2-core</artifactId>
  <version>1.3.3.FINAL</version>
</dependency>
```

A Mapping of CTS2 REST Calls to CTS2 Framework Model Elements

REST call mappings to CTS2 Model elements in Java



Hint: Resolve as JSON or XML in a browser and use the hierarchy of the document to choose methods to drill down to data on attribute you need. Google Chrome with the JSONView extension installed makes the process for JSON transparent as you can hover over the element and see the call to the object you'll need to make in JavaScript.



Generally returned summary lists are returned as Directories and single elements are returned as messages such as "EntryMsg"



The following examples show how to have the output formatted to JSON with the "format=json" parameter. When the format is not specified, it will default to XML.

Description	REST	Model Element Class
Code System Versions	<base url>codesystemversions?format=json	CodeSystemVersionCatalogEntry Directory

Code System Read	<base url>/codesystem/NCI_Thesaurus/version/17.06d	CodeSystemVersionCatalogEntryMsg
Code System Version Query	<base url>/codesystemversions?matchvalue=nci_thesaurus&filtercomponent=resourceName&format=json	CodeSystemVersionCatalogEntryDirectory
Value Sets	<base url>/resolvedvaluesets?format=json	ResolvedValueSetDirectory
Value Set Definition Read	<base url>/cts2/valueset/CDISC ADaM Terminology/definition/5f51c37b?format=json	ValueSetDefinitionMsg
Value Set Query	<base url>/resolvedvaluesets?matchvalue=imputation&filtercomponent=resourceName&format=json	ResolvedValueSetDirectory
Value Set Entries	<base url>/valueset/valueset/CDISC Questionnaire Terminology/definition/aa5e7b3f/resolution/1?format=json	IterableResolvedValueSet
Entities	<base url>/codesystem/NCI_Thesaurus/version/17.06d/entities?format=json	EntityDirectory
Entity Read	<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399?format=json	EntityDescriptionMsg
Entity Query	<base url>/codesystem/NCI_Thesaurus/version/17.06d/entities?matchvalue=swelling&format=json	EntityDirectory
Association parents	<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399?format=json	EntityDescriptionMsg with an instance entity with method calls: entity.getEntityDescription().getNamedEntity().getParent() returning an instance of URIAndEntityName[]
Association children	<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/children?format=json	EntityDirectory
Association subjectOf	<base url>/codesystem/ncp/version/TestForMultiNamespace/entity/G0:NPO_1607/subjectof?format=json	AssociationDirectory
Association targetOf	<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/targetof?format=json	AssociationDirectory
Maps	<base url>/mapversions?format=json	MapVersionDirectory
Map Version Query	<base url>/mapversions?matchvalue=ncit&filtercomponent=resourceSynopsis&format=json	MapVersionDirectory
Map Version Read	<base url>/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0?format=json	MapVersionMsg
Map Entities	<base url>/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0/entries?format=json	MapEntryDirectory
Map Restriction To, From, or Both Role	<base url>/mapversions?codesystem=ICD10CM&codesystemsmaprole=MAP_TO_ROLE&format=json	MapVersionDirectory

Complete Code Example

```
package cts2.mayo.example;

import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.net.HttpURLConnection;
import java.net.URL;
import java.util.List;
```

```

import edu.mayo.cts2.framework.core.json.JsonConverter;
import edu.mayo.cts2.framework.model.codesystemversion.CodeSystemVersionCatalogEntryDirectory;
import edu.mayo.cts2.framework.model.codesystemversion.CodeSystemVersionCatalogEntrySummary;
import edu.mayo.cts2.framework.model.core.EntitySynopsis;
import edu.mayo.cts2.framework.model.core.URIAndEntityName;
import edu.mayo.cts2.framework.model.entity.EntityDescriptionMsg;
import edu.mayo.cts2.framework.model.entity.EntityDirectory;
import edu.mayo.cts2.framework.model.entity.EntityDirectoryEntry;
import edu.mayo.cts2.framework.model.mapversion.MapVersionDirectory;
import edu.mayo.cts2.framework.model.mapversion.MapVersionDirectoryEntry;
import edu.mayo.cts2.framework.model.valuesetdefinition.IteratableResolvedValueSet;
import edu.mayo.cts2.framework.model.valuesetdefinition.ResolvedValueSetDirectory;
import edu.mayo.cts2.framework.model.valuesetdefinition.ResolvedValueSetDirectoryEntry;

public class RESTFromCTS2Framework {
    String baseUrl = "http://lexevscts2.nci.nih.gov/lexevscts2/";
    String format = "?format=json";

    public void getValueSets(){
        URL url;
        try {
            url = new URL(baseUrl + "resolvedvaluesets" + format);
            HttpURLConnection connection = (HttpURLConnection) url
                .openConnection();
            connection.setRequestProperty("Accept", "text/json");
            if (connection.getResponseCode() != 200) {
                throw new RuntimeException("Failed : The HTTP error code is : "
                    + connection.getResponseCode());
            }
            BufferedReader br = new BufferedReader(new InputStreamReader(
                (connection.getInputStream())));
            String output;
            StringBuilder builder = new StringBuilder();
            while ((output = br.readLine()) != null) {
                builder.append(output);
            }
            JsonConverter converter = new JsonConverter();
            ResolvedValueSetDirectory valuesetdir = converter.fromJson(
                builder.toString(), ResolvedValueSetDirectory.class);
            List<ResolvedValueSetDirectoryEntry> sum = valuesetdir
                .getEntryAsReference();
            for (ResolvedValueSetDirectoryEntry s : sum) {
                System.out.println(s.getResolvedHeader().getResolutionOf()
                    .getValueSet().getContent());
            }
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

    public void getValueSetEntries(){
        URL url;
        try {
            url = new URL(baseUrl + "valueset/NICHD%20Newborn%20Screening%20Terminology/definition
/4125c982/resolution/1" + format);
            HttpURLConnection connection = (HttpURLConnection) url
                .openConnection();
            connection.setRequestProperty("Accept", "text/json");
            if (connection.getResponseCode() != 200) {
                throw new RuntimeException("Failed : The HTTP error code is : "
                    + connection.getResponseCode());
            }
            BufferedReader br = new BufferedReader(new InputStreamReader(
                (connection.getInputStream())));
            String output;
            StringBuilder builder = new StringBuilder();
            while ((output = br.readLine()) != null) {
                builder.append(output);
            }
        }
    }
}

```

```

    }
    JsonConverter converter = new JsonConverter();
    IterableResolvedValueSet valuesetdir = converter.fromJson(
        builder.toString(), IterableResolvedValueSet.class);
    List<EntitySynopsis> sum = valuesetdir.getEntryAsReference();
    for (EntitySynopsis s : sum) {
        System.out.println(s.getName());
    }
} catch (Exception e) {
    e.printStackTrace();
}
}

public void getCodeSystems(){
    URL url;
    try {
        url = new URL(baseUrl + "codesystemversions" + format);
        HttpURLConnection connection = (HttpURLConnection) url
            .openConnection();
        connection.setRequestProperty("Accept", "text/json");
        if (connection.getResponseCode() != 200) {
            throw new RuntimeException("Failed : The HTTP error code is : "
                + connection.getResponseCode());
        }
        BufferedReader br = new BufferedReader(new InputStreamReader(
            (connection.getInputStream())));
        String output;
        StringBuilder builder = new StringBuilder();
        while ((output = br.readLine()) != null) {
            builder.append(output);
        }
        JsonConverter converter = new JsonConverter();
        CodeSystemVersionCatalogEntryDirectory valuesetdir = converter.fromJson(
            builder.toString(), CodeSystemVersionCatalogEntryDirectory.class);
        List<CodeSystemVersionCatalogEntrySummary> sum = valuesetdir
            .getEntryAsReference();
        for (CodeSystemVersionCatalogEntrySummary s : sum) {
            System.out.println(s.getFullName());
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
}

}

public void getEntities(){
    URL url;
    try {
        url = new URL(baseUrl + "codesystem/NCI_Thesaurus/version/10.10a/entities" + format);
        HttpURLConnection connection = (HttpURLConnection) url
            .openConnection();
        connection.setRequestProperty("Accept", "text/json");
        if (connection.getResponseCode() != 200) {
            throw new RuntimeException("Failed : The HTTP error code is : "
                + connection.getResponseCode());
        }
        BufferedReader br = new BufferedReader(new InputStreamReader(
            (connection.getInputStream())));
        String output;
        StringBuilder builder = new StringBuilder();
        while ((output = br.readLine()) != null) {
            builder.append(output);
        }
        JsonConverter converter = new JsonConverter();
        EntityDirectory valuesetdir = converter.fromJson(
            builder.toString(), EntityDirectory.class);
        List<EntityDirectoryEntry> sum = valuesetdir
            .getEntryAsReference();
        for (EntityDirectoryEntry s : sum) {
            System.out.println(s.getName());
        }
    }
}

```

```

        }
    } catch (Exception e) {
        e.printStackTrace();
    }
}

public void entityReadParent(){
    URL url;
    try {
        url = new URL(baseUrl + "codesystem/NCI_Thesaurus/version/10.10a/entity/C3399" +
format);

        HttpURLConnection connection = (HttpURLConnection) url
            .openConnection();
        connection.setRequestProperty("Accept", "text/json");
        if (connection.getResponseCode() != 200) {
            throw new RuntimeException("Failed : The HTTP error code is : "
                + connection.getResponseCode());
        }
        BufferedReader br = new BufferedReader(new InputStreamReader(
            (connection.getInputStream())));
        String output;
        StringBuilder builder = new StringBuilder();
        while ((output = br.readLine()) != null) {
            builder.append(output);
        }
        JsonConverter converter = new JsonConverter();
        EntityDescriptionMsg entity = converter.fromJson(
            builder.toString(), EntityDescriptionMsg.class);
        URIAndEntityName[] sum = entity.getEntityDescription().getNamedEntity().getParent();
        for (URIAndEntityName s : sum) {
            System.out.println(s.getName());
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
}

public void getMaps(){
    URL url;
    try {
        url = new URL(baseUrl + "mapversions" + format);
        HttpURLConnection connection = (HttpURLConnection) url
            .openConnection();
        connection.setRequestProperty("Accept", "text/json");
        if (connection.getResponseCode() != 200) {
            throw new RuntimeException("Failed : The HTTP error code is : "
                + connection.getResponseCode());
        }
        BufferedReader br = new BufferedReader(new InputStreamReader(
            (connection.getInputStream())));
        String output;
        StringBuilder builder = new StringBuilder();
        while ((output = br.readLine()) != null) {
            builder.append(output);
        }
        JsonConverter converter = new JsonConverter();
        MapVersionDirectory maps = converter.fromJson(
            builder.toString(), MapVersionDirectory.class);
        List<MapVersionDirectoryEntry> sum = maps.getEntryAsReference();
        for (MapVersionDirectoryEntry s : sum) {
            System.out.println(s.getFormalName());
        }
    } catch (Exception e) {
        e.printStackTrace();
    }
}

/**
 * @param args
 */
public static void main(String[] args) {

```

```

        new RESTFromCTS2Framework().getCodeSystems();
        new RESTFromCTS2Framework().getValueSets();
        new RESTFromCTS2Framework().getEntities();
        new RESTFromCTS2Framework().entityReadParent();
        new RESTFromCTS2Framework().getMaps();
        new RESTFromCTS2Framework().getValueSetEntries();
    }
}

```

Other Development Platforms

REST Clients can be built on PHP, Perl and C# as well.

[examples](#) 

Code System

Getting All CodeSystemCatalogVersions Summaries

Returns a set of CodeSystemVersions.

```
http://<base url>/codesystemversions?maxtoreturn=5&format=json
```

Output

```

{
  "CodeSystemVersionCatalogEntryDirectory": {
    "entry": [
      {
        "codeSystemVersionName": "MDR-13.0",
        "versionOf": {
          "content": "MDR",
          "uri": "urn:oid:2.16.840.1.113883.6.163"
        },
        "documentURI": "urn:oid:2.16.840.1.113883.6.163:13.0",
        "officialResourceVersionId": "13.0",
        "about": "urn:oid:2.16.840.1.113883.6.163:13.0",
        "formalName": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)",
        "resourceSynopsis": {
          "value": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MDR/version/13.0"
      },
      {
        "codeSystemVersionName": "MDR-13.1",
        "versionOf": {
          "content": "MDR",
          "uri": "urn:oid:2.16.840.1.113883.6.163"
        },
        "documentURI": "urn:oid:2.16.840.1.113883.6.163:13.1",
        "officialResourceVersionId": "13.1",
        "about": "urn:oid:2.16.840.1.113883.6.163:13.1",
        "formalName": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)",
        "resourceSynopsis": {
          "value": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MDR/version/13.1"
      },
      {
        "codeSystemVersionName": "MDR-15.0",
        "versionOf": {
          "content": "MDR",
          "uri": "urn:oid:2.16.840.1.113883.6.163"
        }
      }
    ]
  }
}

```

```

      "documentURI": "urn:oid:2.16.840.1.113883.6.163:15.0",
      "officialResourceVersionId": "15.0",
      "about": "urn:oid:2.16.840.1.113883.6.163:15.0",
      "formalName": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)",
      "resourceSynopsis": {
        "value": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)"
      },
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MDR/version/15.0"
    },
    {
      "codeSystemVersionName": "MDR-14.1",
      "versionOf": {
        "content": "MDR",
        "uri": "urn:oid:2.16.840.1.113883.6.163"
      },
      "documentURI": "urn:oid:2.16.840.1.113883.6.163:14.1",
      "officialResourceVersionId": "14.1",
      "about": "urn:oid:2.16.840.1.113883.6.163:14.1",
      "formalName": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)",
      "resourceSynopsis": {
        "value": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)"
      },
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MDR/version/14.1"
    },
    {
      "codeSystemVersionName": "MDR-15.1",
      "versionOf": {
        "content": "MDR",
        "uri": "urn:oid:2.16.840.1.113883.6.163"
      },
      "documentURI": "urn:oid:2.16.840.1.113883.6.163:15.1",
      "officialResourceVersionId": "15.1",
      "about": "urn:oid:2.16.840.1.113883.6.163:15.1",
      "formalName": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)",
      "resourceSynopsis": {
        "value": "MedDRA (Medical Dictionary for Regulatory Activities Terminology)"
      },
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MDR/version/15.1"
    }
  ],
  "complete": "PARTIAL",
  "numEntries": 5,
  "next": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystemversions?page=1&format=json&maxtoreturn=5",
  "heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "codesystemversions",
    "parameter": [
      {
        "arg": "maxtoreturn",
        "val": "5"
      },
      {
        "arg": "format",
        "val": "json"
      }
    ]
  },
  "accessDate": "2017-08-04T16:20:07.172-04:00"
}
}
}

```

CodeSystemVersions Query

Returns a set of CodeSystemVersions based on a text match.

```
http://<base url>/codesystemversions?matchvalue=nci_thesaurus&filtercomponent=resourceName&format=json
```

Output

```

{
  "CodeSystemVersionCatalogEntryDirectory": {
    "entry": [
      {
        "codeSystemVersionName": "NCI_Thesaurus-17.02d",
        "versionOf": {
          "content": "NCI_Thesaurus",
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        },
        "documentURI": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.02d",
        "officialResourceVersionId": "17.02d",
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.02d",
        "formalName": "NCI Thesaurus",
        "resourceSynopsis": {
          "value": "NCI Thesaurus"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.02d"
      },
      {
        "codeSystemVersionName": "NCI_Thesaurus-17.03d",
        "versionOf": {
          "content": "NCI_Thesaurus",
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        },
        "documentURI": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.03d",
        "officialResourceVersionId": "17.03d",
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.03d",
        "formalName": "NCI Thesaurus",
        "resourceSynopsis": {
          "value": "NCI Thesaurus"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.03d"
      },
      {
        "codeSystemVersionName": "NCI_Thesaurus-17.04d",
        "versionOf": {
          "content": "NCI_Thesaurus",
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        },
        "documentURI": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.04d",
        "officialResourceVersionId": "17.04d",
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.04d",
        "formalName": "NCI Thesaurus",
        "resourceSynopsis": {
          "value": "NCI Thesaurus"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.04d"
      },
      {
        "codeSystemVersionName": "NCI_Thesaurus-17.06d",
        "versionOf": {
          "content": "NCI_Thesaurus",
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        },
        "documentURI": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.06d",
        "officialResourceVersionId": "17.06d",
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.06d",
        "formalName": "NCI Thesaurus",
        "resourceSynopsis": {
          "value": "NCI Thesaurus"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
      }
    ],
    "complete": "COMPLETE",
    "numEntries": 4,
    "heading": {

```

```

    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "codesystemversions",
    "parameter": [
      {
        "arg": "matchvalue",
        "val": "nci_thesaurus"
      },
      {
        "arg": "filtercomponent",
        "val": "resourceName"
      },
      {
        "arg": "format",
        "val": "json"
      }
    ],
    "accessDate": "2017-08-04T16:23:29.829-04:00"
  }
}

```

Other Code System Queries

- by ResourceName
 - `http://<Rest Service base URL>/codesystemversions?matchvalue=HL7&filtercomponent=resourceName&format=json`
- ResourceName text match starts with
 - `http://<Rest Service base URL>/codesystemversions?matchvalue=HL&filtercomponent=resourceName&matchalgorithm=startsWith&format=json`
- ResourceName text match contains
 - `http://<Rest Service base URL>/codesystemversions?matchvalue=OmE&filtercomponent=resourceName&matchalgorithm=contains&format=json`
- ResourceName text is exact match
 - `http://<Rest Service base URL>/codesystemversions?matchvalue=HL7-V3 R2.36&filtercomponent=resourceName&format=json`
- About value text match contains
 - `http://<Rest Service base URL>/codesystemversions?matchvalue=owl&filtercomponent=about&matchalgorithm=contains&format=json`
- Only active versions of this code system
 - `http://<Rest Service base URL>/codesystemversions?active=ACTIVE_ONLY&format=json`

CodeSystemVersion Read

Returns a specific code system version id

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d?format=json
```

Output

```

{
  "CodeSystemVersionCatalogEntryMsg": {
    "codeSystemVersionCatalogEntry": {
      "codeSystemVersionName": "NCI_Thesaurus-17.06d",
      "versionOf": {
        "content": "NCI_Thesaurus",
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
      },
      "entityDescriptions": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entities",
      "documentURI": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.06d",
      "state": "FINAL",
      "sourceAndNotation": {
        "sourceAndNotationDescription": "LexEVS"
      },
      "officialResourceVersionId": "17.06d",
      "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#17.06d",
      "formalName": "NCI Thesaurus",
      "keyword": [
        "ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl",
        "NCI_Thesaurus.owl",
        "NCI_Thesaurus",
        "NCI Thesaurus",
        "NCI",
        "urn:oid:2.16.840.1.113883.3.26.1.1"
      ],
      "resourceSynopsis": {
        "value": "NCI Thesaurus"
      },
      "property": [
        {
          "predicate": {
            "uri": "ontologyFormat",
            "name": "ontologyFormat"
          },
          "value": [
            {
              "literal": {
                "value": "OWL"
              }
            }
          ]
        }
      ],
      "entryState": "ACTIVE"
    },
    "heading": {
      "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
      "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d",
      "parameter": [
        {
          "arg": "format",
          "val": "json"
        }
      ],
      "accessDate": "2017-08-04T16:25:00.529-04:00"
    }
  }
}

```

Other Code System Read by Statements

- by URI
<http://<Rest Service base URL>/codesystemversionbyuri?uri=urn:oid:2.16.840.1.113883.6.163:17.1&format=json>

- by Name)
http://<Rest Service base URL>/codesystem/MDR/version/17.1?format=json

Entities

Getting All Code System Entities Summaries

Returns all entities 50 at a time. (Page number and next attributes control place and iteration through the entire set of entities)

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entities?maxtoreturn=50&format=json
```

Output

```
{
  "EntityDirectory": {
    "entry": [
      {
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C14722",
        "name": {
          "namespace": "NCI_Thesaurus",
          "name": "C14722"
        },
        "knownEntityDescription": [
          {
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C14722",
            "describingCodeSystemVersion": {
              "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
              },
              "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
              }
            },
            "designation": "Other Inbred Strains"
          }
        ]
      },
      {
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C422",
        "name": {
          "namespace": "NCI_Thesaurus",
          "name": "C422"
        },
        "knownEntityDescription": [
          {
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C422",
            "describingCodeSystemVersion": {
              "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
              },
              "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
              }
            },
            "designation": "Dexamethasone"
          }
        ]
      }
    ]
  }
}
```

```

    ],
    "complete": "PARTIAL",
    "numEntries": 2,
    "next": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entities?
page=1&format=json&maxtoreturn=2",
    "heading": {
      "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
      "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entities",
      "parameter": [
        {
          "arg": "maxtoreturn",
          "val": "2"
        },
        {
          "arg": "format",
          "val": "json"
        }
      ]
    },
    "accessDate": "2017-08-04T16:32:47.760-04:00"
  }
}

```

Entity Read

Read the exact entity designated by this entity name attribute.

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399?format=json
```

Output

```

{
  "EntityDescriptionMsg": {
    "entityDescription": {
      "namedEntity": {
        "entryState": "ACTIVE",
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C3399",
        "entityID": {
          "namespace": "NCI_Thesaurus",
          "name": "C3399"
        },
        "describingCodeSystemVersion": {
          "version": {
            "content": "NCI_Thesaurus-17.06d",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d"
          },
          "codeSystem": {
            "content": "NCI_Thesaurus",
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
          }
        },
        "designation": [
          {
            "designationRole": "ALTERNATIVE",
            "assertedInCodeSystemVersion": "NCI",
            "value": "Swelling",
            "language": {
              "content": "en"
            }
          },
          {
            "designationRole": "ALTERNATIVE",
            "assertedInCodeSystemVersion": "FDA",
            "value": "Swelling",

```

```

        "language": {
            "content": "en"
        }
    },
    {
        "designationRole": "PREFERRED",
        "value": "Swelling",
        "language": {
            "content": "en"
        }
    }
],
"definition": [
    {
        "definitionRole": "NORMATIVE",
        "value": "Enlargement; expansion in size; sign of inflammation"
    }
],
"property": [
    {
        "predicate": {
            "uri": "http://lexgrid.org/definition-preferred",
            "namespace": "NCI_Thesaurus",
            "name": "DEFINITION"
        },
        "value": [
            {
                "literal": {
                    "value": "Enlargement; expansion in size; sign of inflammation"
                }
            }
        ],
        "propertyQualifier": [
            {
                "predicate": {
                    "uri": "http://lexgrid.org/property-source",
                    "namespace": "lexgrid",
                    "name": "property-source"
                },
                "value": [
                    {
                        "literal": {
                            "value": "NCI"
                        }
                    }
                ]
            }
        ]
    }
],
{
    "predicate": {
        "uri": "http://lexgrid.org/presentation-alternate",
        "namespace": "NCI_Thesaurus",
        "name": "FULL_SYN"
    },
    "value": [
        {
            "literal": {
                "value": "Swelling"
            }
        }
    ],
    "propertyQualifier": [
        {
            "predicate": {
                "uri": "http://lexgrid.org/representational-form",
                "namespace": "lexgrid",
                "name": "representational-form"
            },
            "value": [
                {

```

```

        "literal": {
          "value": "PT"
        }
      ]
    },
    {
      "predicate": {
        "uri": "http://lexgrid.org/property-source",
        "namespace": "lexgrid",
        "name": "property-source"
      },
      "value": [
        {
          "literal": {
            "value": "NCI"
          }
        }
      ]
    }
  ]
},
{
  "predicate": {
    "uri": "http://lexgrid.org/presentation-alternate",
    "namespace": "NCI_Thesaurus",
    "name": "FULL_SYN"
  },
  "value": [
    {
      "literal": {
        "value": "Swelling"
      }
    }
  ],
  "propertyQualifier": [
    {
      "predicate": {
        "uri": "http://lexgrid.org/representational-form",
        "namespace": "lexgrid",
        "name": "representational-form"
      },
      "value": [
        {
          "literal": {
            "value": "PT"
          }
        }
      ]
    }
  ],
  {
    "predicate": {
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#source-code",
      "namespace": "NCI_Thesaurus",
      "name": "source-code"
    },
    "value": [
      {
        "literal": {
          "value": "2091"
        }
      }
    ]
  },
  {
    "predicate": {
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#subsource-name",
      "namespace": "NCI_Thesaurus",
      "name": "subsource-name"
    },
    "value": [

```

```

        {
            "literal": {
                "value": "CDRH"
            }
        }
    ],
    },
    {
        "predicate": {
            "uri": "http://lexgrid.org/property-source",
            "namespace": "lexgrid",
            "name": "property-source"
        },
        "value": [
            {
                "literal": {
                    "value": "FDA"
                }
            }
        ]
    }
]
},
{
    "predicate": {
        "uri": "http://lexgrid.org/presentation-preferred",
        "namespace": "NCI_Thesaurus",
        "name": "Preferred_Name"
    },
    "value": [
        {
            "literal": {
                "value": "Swelling"
            }
        }
    ]
},
{
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Contributing_Source",
        "namespace": "NCI_Thesaurus",
        "name": "Contributing_Source"
    },
    "value": [
        {
            "literal": {
                "value": "FDA"
            }
        }
    ]
},
{
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#FDA_Table",
        "namespace": "NCI_Thesaurus",
        "name": "FDA_Table"
    },
    "value": [
        {
            "literal": {
                "value": "Patient Code (Appendix B)"
            }
        }
    ]
},
{
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Legacy_Concept_Name",
        "namespace": "NCI_Thesaurus",
        "name": "Legacy_Concept_Name"
    },
    },

```

```

        "value": [
            {
                "literal": {
                    "value": "Swelling"
                }
            }
        ]
    },
    {
        "predicate": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Semantic_Type",
            "namespace": "NCI_Thesaurus",
            "name": "Semantic_Type"
        },
        "value": [
            {
                "literal": {
                    "value": "Sign or Symptom"
                }
            }
        ]
    },
    {
        "predicate": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#UMLS_CUI",
            "namespace": "NCI_Thesaurus",
            "name": "UMLS_CUI"
        },
        "value": [
            {
                "literal": {
                    "value": "C0038999"
                }
            }
        ]
    },
    {
        "predicate": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#code",
            "namespace": "NCI_Thesaurus",
            "name": "code"
        },
        "value": [
            {
                "literal": {
                    "value": "C3399"
                }
            }
        ]
    },
    {
        "predicate": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#label",
            "namespace": "NCI_Thesaurus",
            "name": "label"
        },
        "value": [
            {
                "literal": {
                    "value": "Swelling"
                }
            }
        ]
    }
],
"subjectOf": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/subjectof",
"targetOf": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/targetof",
"parent": [
    {

```

```

        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C53458",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C53458",
        "namespace": "NCI_Thesaurus",
        "name": "C53458"
    }
},
"children": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/children",
"entityType": [
    {
        "uri": "http://www.w3.org/2002/07/owl#Class",
        "namespace": "owl",
        "name": "Class"
    }
]
},
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entity/C3399",
    "parameter": [
        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-04T16:34:33.085-04:00"
}
}
}

```

Entity Read with Namespace

Read a version of the entity based on the context of it's namespace.

```
http://lexevscts2.nci.nih.gov/lexevscts2/codesystem/npv/version/TestForMultiNamespace/entity/G0:NPO_1607
```

Output

Entity Read with Namespace

```

<EntityDescriptionMsg xmlns="http://schema.omg.org/spec/CTS2/1.0/Entity" xmlns:core="http://schema.omg.org/spec/CTS2/1.0/Core" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="http://schema.omg.org/spec/CTS2/1.0/Entity http://www.omg.org/spec/cts2/201206/entity/Entity.xsd">
  <core:heading>
    <core:resourceRoot>
      codesystem/npv/version/TestForMultiNamespace/entity/G0:NPO_1607
    </core:resourceRoot>

    <core:resourceURI>
      http://lexevscts2.nci.nih.gov/lexevscts2/codesystem/npv/version/TestForMultiNamespace/entity/G0:NPO_1607
    </core:resourceURI>

    <core:accessDate>2013-12-17T13:18:11.095-06:00</core:accessDate>
  </core:heading>

  <EntityDescription>
    <namedEntity about="http://id.nlm.nih.gov/cui/C1138831/NPO_1607" entryState="ACTIVE">
      <entityID>
        <core:namespace>G0</core:namespace>
        <core:name>NPO_1607</core:name>
      </entityID>
    </namedEntity>
  </EntityDescription>
</EntityDescriptionMsg>

```

</entityID>

<describingCodeSystemVersion>

<core:version href="http://lexevscts2.nci.nih.gov/lexevscts2/codesystem/npo/version/TestForMultiNamespace">npo-TestForMultiNamespace</core:version>

<core:codeSystem uri="http://purl.bioontology.org/ontology/npo">npo</core:codeSystem>

</describingCodeSystemVersion>

<designation designationRole="PREFERRED">

<core:value>regulation of molecular function</core:value>

</designation>

<property>

<core:predicate uri="http://purl.bioontology.org/ontology/npo/code">

<core:namespace>npo</core:namespace>

<core:name>code</core:name>

</core:predicate>

<core:value>

<core:literal>

<core:value>NP0_1653</core:value>

</core:literal>

</core:value>

</property>

<property>

<core:predicate uri="http://purl.bioontology.org/ontology/npo/dBXrefID">

<core:namespace>npo</core:namespace>

<core:name>dBXrefID</core:name>

</core:predicate>

<core:value>

<core:literal>

<core:value>G0:0065009</core:value>

</core:literal>

</core:value>

</property>

<property>

<core:predicate uri="http://purl.bioontology.org/ontology/npo/definition">

<core:namespace>npo</core:namespace>

<core:name>definition</core:name>

</core:predicate>

```

<core:value>
<core:literal>
<core:value>
<ncicp:ComplexDefinition><ncicp:def-definition>Any process that modulates the frequency, rate or extent of a
molecular function, an elemental biological activity occurring at the molecular level, such as catalysis or
binding.</ncicp:def-definition></ncicp:ComplexDefinition>
</core:value>

</core:literal>

</core:value>

</property>

<property>
<core:predicate uri="http://purl.bioontology.org/ontology/npo/preferred_name">
<core:namespace>npo</core:namespace>
<core:name>preferred_name</core:name>

</core:predicate>

<core:value>
<core:literal>
<core:value>regulation of molecular function</core:value>

</core:literal>

</core:value>

</property>

<property>
<core:predicate uri="http://purl.bioontology.org/ontology/npo/primitive">
<core:namespace>npo</core:namespace>
<core:name>primitive</core:name>

</core:predicate>

<core:value>
<core:literal>
<core:value>false</core:value>

</core:literal>

</core:value>

</property>

<subjectOf>
http://lexevscts2.nci.nih.gov/lexevscts2/codesystem/npo/version/TestForMultiNamespace/entity/G0:NPO_1607
/subjectof

```

```

</subjectOf>

<targetOf>
http://lexevscts2.nci.nih.gov/lexevscts2/codesystem/npo/version/TestForMultiNamespace/entity/G0:NPO_1607
/targetOf
</targetOf>

<children>
http://lexevscts2.nci.nih.gov/lexevscts2/codesystem/npo/version/TestForMultiNamespace/entity/NPO_1607/children
</children>

<entityType uri="http://www.w3.org/2002/07/owl#Class">
<core:namespace>owl</core:namespace>
<core:name>Class</core:name>

</entityType>

</namedEntity>

</EntityDescription>

</EntityDescriptionMsg>

```

Entity Query

Query based on a text match of the default filter component knownEntityDescription

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entities?matchvalue=swelling&maxtoreturn=2&format=json
```

Output

```

{
  "EntityDirectory": {
    "entry": [
      {
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C3399",
        "name": {
          "namespace": "NCI_Thesaurus",
          "name": "C3399"
        },
        "knownEntityDescription": [
          {
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399",
            "describingCodeSystemVersion": {
              "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
              },
              "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
              }
            },
            "designation": "Swelling"
          }
        ]
      }
    ]
  }
}

```

```

    },
    {
      "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C20914",
      "name": {
        "namespace": "NCI_Thesaurus",
        "name": "C20914"
      },
      "knownEntityDescription": [
        {
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C20914",
          "describingCodeSystemVersion": {
            "version": {
              "content": "NCI_Thesaurus-17.06d",
              "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
            },
            "codeSystem": {
              "content": "NCI_Thesaurus",
              "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
            }
          },
          "designation": "Uterine Swelling"
        }
      ]
    }
  ],
  "complete": "PARTIAL",
  "numEntries": 2,
  "next": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entities?page=1&matchvalue=swelling&format=json&maxtoreturn=2",
  "heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entities",
    "parameter": [
      {
        "arg": "matchvalue",
        "val": "swelling"
      },
      {
        "arg": "maxtoreturn",
        "val": "2"
      },
      {
        "arg": "format",
        "val": "json"
      }
    ]
  },
  "accessDate": "2017-08-04T17:15:18.926-04:00"
}
}
}

```

Other Entity Queries

- all codesystems
http://<Rest Service base URL>/entities?matchvalue=tree
- restrict by codesystem
http://<Rest Service base URL>/codesystem/NCI_Thesaurus/version/17.06d/entities?matchvalue=finger&format=json
http://<Rest Service base URL>/entities?matchvalue=finger&codesystemversion=NCI_Thesaurus-17.06d&format=json
- filter 'startsWith'
http://<Rest Service base URL>/codesystem/NCI_Thesaurus/version/17.06d/entities?matchvalue=heart&matchalgorithm=startsWith&format=json
- filter 'startsWith', restriction to 'CURRENT' version
http://<Rest Service base URL>/codesystem/NCI_Thesaurus/entities?matchalgorithm=startsWith&matchvalue=Gentamicin&format=json
- filter 'contains'
http://<Rest Service base URL>/entities?matchvalue=heart&matchalgorithm=contains&format=json

http://<Rest Service base URL>/codesystem/NCI_Thesaurus/version/NCI_Thesaurus-17.06d/entities?
matchalgorithm=contains&matchvalue=Gentamicin&format=json

- filter 'exactMatch'
http:// <Rest Service base URL> /codesystem/NCI_Thesaurus/version/NCI_Thesaurus-17.06d/entities?
matchalgorithm=exactMatch&matchvalue=swelling&format=json

Associations

Associations: Parents

The entity read function automatically returns the parents of the entity.

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399?format=json
```

Output

```
{
  "EntityDescriptionMsg": {
    "entityDescription": {
      "namedEntity": {
        "entryState": "ACTIVE",
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C3399",
        "entityID": {
          "namespace": "NCI_Thesaurus",
          "name": "C3399"
        }
      },
      "describingCodeSystemVersion": {
        "version": {
          "content": "NCI_Thesaurus-17.06d",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
        },
        "codeSystem": {
          "content": "NCI_Thesaurus",
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        }
      },
      "designation": [
        {
          "designationRole": "ALTERNATIVE",
          "assertedInCodeSystemVersion": "NCI",
          "value": "Swelling",
          "language": {
            "content": "en"
          }
        },
        {
          "designationRole": "ALTERNATIVE",
          "assertedInCodeSystemVersion": "FDA",
          "value": "Swelling",
          "language": {
            "content": "en"
          }
        },
        {
          "designationRole": "PREFERRED",
          "value": "Swelling",
          "language": {
            "content": "en"
          }
        }
      ],
      "definition": [
        {
          "definitionRole": "NORMATIVE",
          "value": "Enlargement; expansion in size; sign of inflammation"
        }
      ]
    }
  }
}
```

```

],
"property": [
  {
    "predicate": {
      "uri": "http://lexgrid.org/definition-preferred",
      "namespace": "NCI_Thesaurus",
      "name": "DEFINITION"
    },
    "value": [
      {
        "literal": {
          "value": "Enlargement; expansion in size; sign of inflammation"
        }
      }
    ],
    "propertyQualifier": [
      {
        "predicate": {
          "uri": "http://lexgrid.org/property-source",
          "namespace": "lexgrid",
          "name": "property-source"
        },
        "value": [
          {
            "literal": {
              "value": "NCI"
            }
          }
        ]
      }
    ]
  },
  {
    "predicate": {
      "uri": "http://lexgrid.org/presentation-alternate",
      "namespace": "NCI_Thesaurus",
      "name": "FULL_SYN"
    },
    "value": [
      {
        "literal": {
          "value": "Swelling"
        }
      }
    ],
    "propertyQualifier": [
      {
        "predicate": {
          "uri": "http://lexgrid.org/representational-form",
          "namespace": "lexgrid",
          "name": "representational-form"
        },
        "value": [
          {
            "literal": {
              "value": "PT"
            }
          }
        ]
      },
      {
        "predicate": {
          "uri": "http://lexgrid.org/property-source",
          "namespace": "lexgrid",
          "name": "property-source"
        },
        "value": [
          {
            "literal": {
              "value": "NCI"
            }
          }
        ]
      }
    ]
  }
]

```

```

    }
  ]
}
],
{
  "predicate": {
    "uri": "http://lexgrid.org/presentation-alternate",
    "namespace": "NCI_Thesaurus",
    "name": "FULL_SYN"
  },
  "value": [
    {
      "literal": {
        "value": "Swelling"
      }
    }
  ],
  "propertyQualifier": [
    {
      "predicate": {
        "uri": "http://lexgrid.org/representational-form",
        "namespace": "lexgrid",
        "name": "representational-form"
      },
      "value": [
        {
          "literal": {
            "value": "PT"
          }
        }
      ]
    }
  ],
  {
    "predicate": {
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#source-code",
      "namespace": "NCI_Thesaurus",
      "name": "source-code"
    },
    "value": [
      {
        "literal": {
          "value": "2091"
        }
      }
    ]
  },
  {
    "predicate": {
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#subsource-name",
      "namespace": "NCI_Thesaurus",
      "name": "subsource-name"
    },
    "value": [
      {
        "literal": {
          "value": "CDRH"
        }
      }
    ]
  },
  {
    "predicate": {
      "uri": "http://lexgrid.org/property-source",
      "namespace": "lexgrid",
      "name": "property-source"
    },
    "value": [
      {
        "literal": {
          "value": "FDA"
        }
      }
    ]
  }
}

```

```

    }
  }
]
},
{
  "predicate": {
    "uri": "http://lexgrid.org/presentation-preferred",
    "namespace": "NCI_Thesaurus",
    "name": "Preferred_Name"
  },
  "value": [
    {
      "literal": {
        "value": "Swelling"
      }
    }
  ]
},
{
  "predicate": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Contributing_Source",
    "namespace": "NCI_Thesaurus",
    "name": "Contributing_Source"
  },
  "value": [
    {
      "literal": {
        "value": "FDA"
      }
    }
  ]
},
{
  "predicate": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#FDA_Table",
    "namespace": "NCI_Thesaurus",
    "name": "FDA_Table"
  },
  "value": [
    {
      "literal": {
        "value": "Patient Code (Appendix B)"
      }
    }
  ]
},
{
  "predicate": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Legacy_Concept_Name",
    "namespace": "NCI_Thesaurus",
    "name": "Legacy_Concept_Name"
  },
  "value": [
    {
      "literal": {
        "value": "Swelling"
      }
    }
  ]
},
{
  "predicate": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#Semantic_Type",
    "namespace": "NCI_Thesaurus",
    "name": "Semantic_Type"
  },
  "value": [
    {
      "literal": {

```

```

        "value": "Sign or Symptom"
    }
}
],
{
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#UMLS_CUI",
        "namespace": "NCI_Thesaurus",
        "name": "UMLS_CUI"
    },
    "value": [
        {
            "literal": {
                "value": "C0038999"
            }
        }
    ]
},
{
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#code",
        "namespace": "NCI_Thesaurus",
        "name": "code"
    },
    "value": [
        {
            "literal": {
                "value": "C3399"
            }
        }
    ]
},
{
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#label",
        "namespace": "NCI_Thesaurus",
        "name": "label"
    },
    "value": [
        {
            "literal": {
                "value": "Swelling"
            }
        }
    ]
}
],
    "subjectOf": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/subjectof",
    "targetOf": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/targetof",
    "parent": [
        {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C53458",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C53458",
            "namespace": "NCI_Thesaurus",
            "name": "C53458"
        }
    ],
    "children": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/children",
    "entityType": [
        {
            "uri": "http://www.w3.org/2002/07/owl#Class",
            "namespace": "owl",
            "name": "Class"
        }
    ]
}
}

```

```

    },
    "heading": {
      "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
      "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entity/C3399",
      "parameter": [
        {
          "arg": "format",
          "val": "json"
        }
      ],
      "accessDate": "2017-08-04T17:17:24.701-04:00"
    }
  }
}

```

Associations: Children

Returns all the children of the designated entity.

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/children?format=json
```

Output

```

{
  "EntityDirectory": {
    "entry": [
      {
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C34569",
        "name": {
          "namespace": "NCI_Thesaurus",
          "name": "C34569"
        },
        "knownEntityDescription": [
          {
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C34569",
            "describingCodeSystemVersion": {
              "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
              },
              "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
              }
            },
            "designation": "Elephantiasis"
          }
        ]
      },
      {
        "about": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C3002",
        "name": {
          "namespace": "NCI_Thesaurus",
          "name": "C3002"
        },
        "knownEntityDescription": [
          {
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3002",
            "describingCodeSystemVersion": {
              "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
              }
            }
          }
        ]
      }
    ]
  }
}

```

```

        },
        "codeSystem": {
            "content": "NCI_Thesaurus",
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        }
    },
    "designation": "Edema"
}
]
}
],
"complete": "COMPLETE",
"numEntries": 2,
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/children",
    "parameter": [
        {
            "arg": "format",
            "val": "json"
        }
    ]
},
"accessDate": "2017-08-04T17:18:44.257-04:00"
}
}
}

```

Associations: SubjectOf

Returns all entities that are the subject of an association with this entity.

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/subjectof?format=json
```

Output

```

{
  "AssociationDirectory": {
    "entry": [
      {
        "subject": {
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C3399",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399",
          "namespace": "NCI_Thesaurus",
          "name": "C3399"
        },
        "predicate": {
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#A8",
          "name": "Concept_In_Subset"
        },
        "target": {
          "entity": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C62596",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C62596",
            "namespace": "NCI_Thesaurus",
            "name": "C62596"
          }
        },
        "assertedBy": {
          "version": {
            "content": "NCI_Thesaurus-17.06d",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
          }
        }
      }
    ]
  }
}

```

```

        "codeSystem": {
            "content": "NCI_Thesaurus",
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        }
    },
    {
        "subject": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C62596",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d
/entity/C62596",
            "namespace": "NCI_Thesaurus",
            "name": "C62596"
        },
        "predicate": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#A8",
            "name": "Concept_In_Subset"
        },
        "target": {
            "entity": {
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C54450",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d/entity/C54450",
                "namespace": "NCI_Thesaurus",
                "name": "C54450"
            }
        },
        "assertedBy": {
            "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d"
            },
            "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
            }
        }
    },
    {
        "subject": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C54450",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d
/entity/C54450",
            "namespace": "NCI_Thesaurus",
            "name": "C54450"
        },
        "predicate": {
            "uri": "http://www.w3.org/2000/01/rdf-schema#subClassOf",
            "name": "subClassOf"
        },
        "target": {
            "entity": {
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C53458",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d/entity/C53458",
                "namespace": "NCI_Thesaurus",
                "name": "C53458"
            }
        },
        "assertedBy": {
            "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d"
            },
            "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
            }
        }
    }
}

```

```

    }
  ],
  "complete": "COMPLETE",
  "numEntries": 3,
  "heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/subjectof",
    "parameter": [
      {
        "arg": "format",
        "val": "json"
      }
    ],
    "accessDate": "2017-08-04T17:19:36.589-04:00"
  }
}
}
}

```

Associations: TargetOf

Returns all entities that are the target of this entity in an association.

```
http://<base url>/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/targetof?maxreturn=5&format=json
```

Output

```

{
  "AssociationDirectory": {
    "entry": [
      {
        "subject": {
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C3399",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399",
          "namespace": "NCI_Thesaurus",
          "name": "C3399"
        },
        "predicate": {
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#R108",
          "name": "Disease_Has_Finding"
        },
        "target": {
          "entity": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#@75fee354830c997d4bc0e128e16aec09",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/@75fee354830c997d4bc0e128e16aec09",
            "namespace": "NCI_Thesaurus",
            "name": "@75fee354830c997d4bc0e128e16aec09"
          }
        },
        "assertedBy": {
          "version": {
            "content": "NCI_Thesaurus-17.06d",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
          },
          "codeSystem": {
            "content": "NCI_Thesaurus",
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
          }
        }
      }
    ],
    "subject": {
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.

```

```

owl#@75fee354830c997d4bc0e128e16aec09",
  "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d
/entity/@75fee354830c997d4bc0e128e16aec09",
  "namespace": "NCI_Thesaurus",
  "name": "@75fee354830c997d4bc0e128e16aec09"
},
"predicate": {
  "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#R108",
  "name": "Disease_Has_Finding"
},
"target": {
  "entity": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C27477",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d/entity/C27477",
    "namespace": "NCI_Thesaurus",
    "name": "C27477"
  }
},
"assertedBy": {
  "version": {
    "content": "NCI_Thesaurus-17.06d",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d"
  },
  "codeSystem": {
    "content": "NCI_Thesaurus",
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
  }
}
},
{
  "subject": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C27477",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d
/entity/C27477",
    "namespace": "NCI_Thesaurus",
    "name": "C27477"
  },
  "predicate": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#R108",
    "name": "Disease_Has_Finding"
  },
  "target": {
    "entity": {
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.
owl#@75fee354830c997d4bc0e128e16aec09",
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d/entity/@75fee354830c997d4bc0e128e16aec09",
      "namespace": "NCI_Thesaurus",
      "name": "@75fee354830c997d4bc0e128e16aec09"
    }
  },
  "assertedBy": {
    "version": {
      "content": "NCI_Thesaurus-17.06d",
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.
06d"
    },
    "codeSystem": {
      "content": "NCI_Thesaurus",
      "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
    }
  }
}
},
{
  "subject": {
    "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.
owl#@75fee354830c997d4bc0e128e16aec09",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d
/entity/@75fee354830c997d4bc0e128e16aec09",

```

```

        "namespace": "NCI_Thesaurus",
        "name": "@75fee354830c997d4bc0e128e16aec09"
    },
    "predicate": {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#R108",
        "name": "Disease_Has_Finding"
    },
    "target": {
        "entity": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C27374",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C27374",
            "namespace": "NCI_Thesaurus",
            "name": "C27374"
        }
    },
    "assertedBy": {
        "version": {
            "content": "NCI_Thesaurus-17.06d",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
        },
        "codeSystem": {
            "content": "NCI_Thesaurus",
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        }
    },
    {
        "subject": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C27374",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C27374",
            "namespace": "NCI_Thesaurus",
            "name": "C27374"
        },
        "predicate": {
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#R108",
            "name": "Disease_Has_Finding"
        },
        "target": {
            "entity": {
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#@75fee354830c997d4bc0e128e16aec09",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/@75fee354830c997d4bc0e128e16aec09",
                "namespace": "NCI_Thesaurus",
                "name": "@75fee354830c997d4bc0e128e16aec09"
            }
        },
        "assertedBy": {
            "version": {
                "content": "NCI_Thesaurus-17.06d",
                "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d"
            },
            "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
            }
        }
    },
    "complete": "PARTIAL",
    "numEntries": 5,
    "next": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/targetof?page=1&format=json&maxtoreturn=5",
    "heading": {
        "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
        "resourceURI": "codesystem/NCI_Thesaurus/version/17.06d/entity/C3399/targetof",
        "parameter": [

```

```

        {
            "arg": "maxtoreturn",
            "val": "5"
        },
        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-04T17:21:47.508-04:00"
}
}
}

```

Map

Map Version Summaries

Returns a list of summaries of a all code system maps on page at a time (With the option of choosing page place and moving iteration to the next page).

```
http://<base url>/mapversions?format=json
```

Output

```

{
  "MapVersionDirectory": {
    "entry": [
      {
        "mapVersionName": "MA_to_NCIt_Mapping-1.0",
        "versionOf": {
          "content": "MA_to_NCIt_Mapping",
          "uri": "MA_to_NCIt_Mapping",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
        },
        "documentURI": "MA_to_NCIt_Mapping",
        "about": "MA_to_NCIt_Mapping",
        "formalName": "MA_to_NCIt_Mapping",
        "resourceSynopsis": {
          "value": "MA_to_NCIt_Mapping"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0"
      },
      {
        "mapVersionName": "GO_to_NCIt_Mapping-1.1",
        "versionOf": {
          "content": "GO_to_NCIt_Mapping",
          "uri": "GO_to_NCIt_Mapping",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/GO_to_NCIt_Mapping"
        },
        "documentURI": "GO_to_NCIt_Mapping",
        "about": "GO_to_NCIt_Mapping",
        "formalName": "GO_to_NCIt_Mapping",
        "resourceSynopsis": {
          "value": "GO_to_NCIt_Mapping"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/GO_to_NCIt_Mapping/version/GO_to_NCIt_Mapping-1.1"
      },
      {
        "mapVersionName": "NCIt_to_ChEBI_Mapping-1.0",
        "versionOf": {
          "content": "NCIt_to_ChEBI_Mapping",
          "uri": "urn:oid:NCIt_to_ChEBI_Mapping",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_ChEBI_Mapping"
        }
      }
    ]
  }
}

```

```

    },
    "documentURI": "urn:oid:NCIt_to_ChEBI_Mapping",
    "about": "urn:oid:NCIt_to_ChEBI_Mapping",
    "formalName": "NCIt_to_ChEBI_Mapping",
    "resourceSynopsis": {
        "value": "NCIt_to_ChEBI_Mapping"
    },
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_ChEBI_Mapping/version
/NCIt_to_ChEBI_Mapping-1.0"
},
{
    "mapVersionName": "PDQ_2016_07_31_TO_NCI_2016_10E-2016_07_31",
    "versionOf": {
        "content": "PDQ_2016_07_31_TO_NCI_2016_10E",
        "uri": "urn:oid:CL512803.PDQ.NCI",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/PDQ_2016_07_31_TO_NCI_2016_10E"
    },
    "documentURI": "urn:oid:CL512803.PDQ.NCI",
    "about": "urn:oid:CL512803.PDQ.NCI",
    "formalName": "PDQ_2016_07_31_TO_NCI_2016_10E",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/PDQ_2016_07_31_TO_NCI_2016_10E/version
/PDQ_2016_07_31_TO_NCI_2016_10E-2016_07_31"
},
{
    "mapVersionName": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901",
    "versionOf": {
        "content": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010",
        "uri": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10_2010"
    },
    "documentURI": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
    "about": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
    "formalName": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10_2010
/version/SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901"
},
{
    "mapVersionName": "SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014-20160901",
    "versionOf": {
        "content": "SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014",
        "uri": "urn:oid:C3645705.SNOMEDCT_US.ICD10CM",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map
/SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014"
    },
    "documentURI": "urn:oid:C3645705.SNOMEDCT_US.ICD10CM",
    "about": "urn:oid:C3645705.SNOMEDCT_US.ICD10CM",
    "formalName": "SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014",
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014
/version/SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014-20160901"
},
{
    "mapVersionName": "NCIt_to_HGNC_Mapping-1.0",
    "versionOf": {
        "content": "NCIt_to_HGNC_Mapping",
        "uri": "NCIt_to_HGNC_Mapping",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_HGNC_Mapping"
    },
    "documentURI": "NCIt_to_HGNC_Mapping",
    "about": "NCIt_to_HGNC_Mapping",
    "formalName": "NCIt_to_HGNC_Mapping",
    "resourceSynopsis": {
        "value": "NCIt_to_HGNC_Mapping"
    },
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_HGNC_Mapping/version
/NCIt_to_HGNC_Mapping-1.0"
}
],
"complete": "COMPLETE",
"numEntries": 7,
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",

```

```

    "resourceURI": "mapversions",
    "parameter": [
      {
        "arg": "format",
        "val": "json"
      }
    ],
    "accessDate": "2017-08-04T17:23:10.907-04:00"
  }
}

```

Map Version Read

Returns a specific map version for a given map version resource synopsis.

```
http://<base url>/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0?format=json
```

Output

```

{
  "MapVersionMsg": {
    "mapVersion": {
      "mapVersionName": "MA_to_NCIt_Mapping-1.0",
      "versionOf": {
        "content": "MA_to_NCIt_Mapping",
        "uri": "MA_to_NCIt_Mapping",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
      },
      "fromCodeSystemVersion": {
        "version": {
          "content": "ma-null",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/ma/version/null"
        },
        "codeSystem": {
          "content": "ma"
        }
      },
      "toCodeSystemVersion": {
        "version": {
          "content": "NCI_Thesaurus-null",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/null"
        },
        "codeSystem": {
          "content": "NCI_Thesaurus"
        }
      },
      "documentURI": "MA_to_NCIt_Mapping",
      "state": "FINAL",
      "sourceAndNotation": {
        "sourceAndNotationDescription": "LexEVS"
      },
      "about": "MA_to_NCIt_Mapping",
      "formalName": "MA_to_NCIt_Mapping",
      "keyword": [
        "MA_to_NCIt_Mapping"
      ],
      "resourceSynopsis": {
        "value": "MA_to_NCIt_Mapping"
      },
      "entryState": "ACTIVE"
    },
    "heading": {
      "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
      "resourceURI": "map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0",
      "parameter": [

```

```

        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-04T17:25:58.902-04:00"
}
}
}
}

```

Map Entries

Paginated entries of this Map Version

```
http://<base url>/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0/entries?maxreturn=3&format=json
```

Output

```

{
  "MapEntryDirectory": {
    "entry": [
      {
        "assertedBy": {
          "mapVersion": {
            "content": "MA_to_NCIt_Mapping-1.0",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MA_to_NCIt_Mapping/version
/1.0"
          },
          "map": {
            "content": "MA_to_NCIt_Mapping",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
          }
        },
        "mapFrom": {
          "uri": "http://www.w3.org/ns/ma-ont#MA:0000002",
          "namespace": "MA",
          "name": "MA:0000002"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping/version
/MA_to_NCIt_Mapping-1.0/entry/MA:MA%253A0000002",
        "resourceName": "MA:MA%253A0000002"
      },
      {
        "assertedBy": {
          "mapVersion": {
            "content": "MA_to_NCIt_Mapping-1.0",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MA_to_NCIt_Mapping/version
/1.0"
          },
          "map": {
            "content": "MA_to_NCIt_Mapping",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
          }
        },
        "mapFrom": {
          "uri": "http://www.w3.org/ns/ma-ont#MA:0000003",
          "namespace": "MA",
          "name": "MA:0000003"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping/version
/MA_to_NCIt_Mapping-1.0/entry/MA:MA%253A0000003",
        "resourceName": "MA:MA%253A0000003"
      },
      {
        "assertedBy": {
          "mapVersion": {

```

```

        "content": "MA_to_NCIt_Mapping-1.0",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MA_to_NCIt_Mapping/version
/1.0"
    },
    "map": {
        "content": "MA_to_NCIt_Mapping",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
    }
},
"mapFrom": {
    "uri": "http://www.w3.org/ns/ma-ont#MA:0000004",
    "namespace": "MA",
    "name": "MA:0000004"
},
"href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping/version
/MA_to_NCIt_Mapping-1.0/entry/MA:MA%253A00000004",
"resourceName": "MA:MA%253A00000004"
}
],
"complete": "PARTIAL",
"numEntries": 3,
"next": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0
/entries?page=1&format=json&maxtoreturn=3",
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0/entries",
    "parameter": [
        {
            "arg": "maxtoreturn",
            "val": "3"
        },
        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-04T17:28:42.923-04:00"
}
}
}
}

```

Map Entry

Restrict to/from entity code system

```
http://<base url>/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0/entry/MA:MA%253A00000002?format=json
```

Output

```

{
  "MapEntryMsg": {
    "entry": {
      "processingRule": "ALL_MATCHES",
      "assertedBy": {
        "mapVersion": {
          "content": "MA_to_NCIt_Mapping-1.0",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/MA_to_NCIt_Mapping/version/1.0"
        },
        "map": {
          "content": "MA_to_NCIt_Mapping",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
        }
      },
      "mapFrom": {
        "uri": "http://www.w3.org/ns/ma-ont#MA:0000002",

```

```

        "namespace": "MA",
        "name": "MA:0000002"
    },
    "mapSet": [
        {
            "processingRule": "ALL_MATCHES",
            "entryOrder": 1,
            "mapTarget": [
                {
                    "entryOrder": 1,
                    "mapTo": {
                        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/NCI_Thesaurus.owl#C32696",
                        "namespace": "NCI_Thesaurus",
                        "name": "C32696"
                    }
                }
            ]
        }
    ],
    "entryState": "ACTIVE"
},
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0/entry/MA:MA%3A0000002",
    "parameter": [
        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-07T11:08:54.296-04:00"
}
}
}

```

Map Version Query

Returns a range of Maps for a text match on the resourceSynopsis.

```
http://<base url>/mapversions?matchvalue=ncit&filtercomponent=resourceSynopsis&format=json
```

Output

```

{
  "MapVersionDirectory": {
    "entry": [
      {
        "mapVersionName": "MA_to_NCIt_Mapping-1.0",
        "versionOf": {
          "content": "MA_to_NCIt_Mapping",
          "uri": "MA_to_NCIt_Mapping",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping"
        },
        "documentURI": "MA_to_NCIt_Mapping",
        "about": "MA_to_NCIt_Mapping",
        "formalName": "MA_to_NCIt_Mapping",
        "resourceSynopsis": {
          "value": "MA_to_NCIt_Mapping"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/MA_to_NCIt_Mapping/version/MA_to_NCIt_Mapping-1.0"
      },
      {
        "mapVersionName": "GO_to_NCIt_Mapping-1.1",
        "versionOf": {
          "content": "GO_to_NCIt_Mapping",

```

```

        "uri": "GO_to_NCIt_Mapping",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/GO_to_NCIt_Mapping"
    },
    "documentURI": "GO_to_NCIt_Mapping",
    "about": "GO_to_NCIt_Mapping",
    "formalName": "GO_to_NCIt_Mapping",
    "resourceSynopsis": {
        "value": "GO_to_NCIt_Mapping"
    },
    "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/GO_to_NCIt_Mapping/version
/GO_to_NCIt_Mapping-1.1"
    },
    {
        "mapVersionName": "NCIt_to_ChEBI_Mapping-1.0",
        "versionOf": {
            "content": "NCIt_to_ChEBI_Mapping",
            "uri": "urn:oid:NCIt_to_ChEBI_Mapping",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_ChEBI_Mapping"
        },
        "documentURI": "urn:oid:NCIt_to_ChEBI_Mapping",
        "about": "urn:oid:NCIt_to_ChEBI_Mapping",
        "formalName": "NCIt_to_ChEBI_Mapping",
        "resourceSynopsis": {
            "value": "NCIt_to_ChEBI_Mapping"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_ChEBI_Mapping/version
/NCIt_to_ChEBI_Mapping-1.0"
    },
    {
        "mapVersionName": "NCIt_to_HGNC_Mapping-1.0",
        "versionOf": {
            "content": "NCIt_to_HGNC_Mapping",
            "uri": "NCIt_to_HGNC_Mapping",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_HGNC_Mapping"
        },
        "documentURI": "NCIt_to_HGNC_Mapping",
        "about": "NCIt_to_HGNC_Mapping",
        "formalName": "NCIt_to_HGNC_Mapping",
        "resourceSynopsis": {
            "value": "NCIt_to_HGNC_Mapping"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/NCIt_to_HGNC_Mapping/version
/NCIt_to_HGNC_Mapping-1.0"
    }
    ],
    "complete": "COMPLETE",
    "numEntries": 4,
    "heading": {
        "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
        "resourceURI": "mapversions",
        "parameter": [
            {
                "arg": "matchvalue",
                "val": "ncit"
            },
            {
                "arg": "filtercomponent",
                "val": "resourceSynopsis"
            },
            {
                "arg": "format",
                "val": "json"
            }
        ]
    },
    "accessDate": "2017-08-07T11:10:40.849-04:00"
}
}
}

```

Map Versions

Of a single code system

```
http://<base url>/map/GO_to_NCIt_Mapping/versions?format=json
```

Output

```
{
  "MapVersionDirectory": {
    "entry": [
      {
        "mapVersionName": "GO_to_NCIt_Mapping-1.1",
        "versionOf": {
          "content": "GO_to_NCIt_Mapping",
          "uri": "GO_to_NCIt_Mapping",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/GO_to_NCIt_Mapping"
        },
        "documentURI": "GO_to_NCIt_Mapping",
        "about": "GO_to_NCIt_Mapping",
        "formalName": "GO_to_NCIt_Mapping",
        "resourceSynopsis": {
          "value": "GO_to_NCIt_Mapping"
        },
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/GO_to_NCIt_Mapping/version/GO_to_NCIt_Mapping-1.1"
      }
    ],
    "complete": "COMPLETE",
    "numEntries": 1,
    "heading": {
      "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
      "resourceURI": "map/GO_to_NCIt_Mapping/versions",
      "parameter": [
        {
          "arg": "format",
          "val": "json"
        }
      ]
    },
    "accessDate": "2017-08-07T11:14:16.315-04:00"
  }
}
```

Map Restriction to Role

To/From mapping example (Also MAP_FROM_ROLE)

```
http://<base url>/mapversions?codesystem=ICD10&codesystemsmaprole=MAP_TO_ROLE&format=json
```

Output

```
{
  "MapVersionDirectory": {
    "entry": [
      {
        "mapVersionName": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901",
        "versionOf": {
          "content": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010",
          "uri": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10_2010"
        },
        "documentURI": "urn:oid:C3645687.SNOMEDCT_US.ICD10",

```

```

        "about": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
        "formalName": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10_2010
/version/SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901"
    }
},
"complete": "COMPLETE",
"numEntries": 1,
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "mapversions",
    "parameter": [
        {
            "arg": "codesystem",
            "val": "ICD10"
        },
        {
            "arg": "codesystemsmaprole",
            "val": "MAP_TO_ROLE"
        },
        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-07T11:23:41.341-04:00"
}
}
}

```

Map To/From or Both

Map to or from an entity or use MAP_FROM_BOTH.

```
http://<base url>/mapversions?entity=22298006&entitiesmaprole=MAP_FROM_ROLE&format=json
```

Output

```

{
  "MapVersionDirectory": {
    "entry": [
      {
        "mapVersionName": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901",
        "versionOf": {
          "content": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010",
          "uri": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10_2010
/version/SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901"
        },
        "documentURI": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
        "about": "urn:oid:C3645687.SNOMEDCT_US.ICD10",
        "formalName": "SNOMEDCT_US_2016_09_01_TO_ICD10_2010",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10_2010
/version/SNOMEDCT_US_2016_09_01_TO_ICD10_2010-20160901"
      },
      {
        "mapVersionName": "SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014-20160901",
        "versionOf": {
          "content": "SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014",
          "uri": "urn:oid:C3645705.SNOMEDCT_US.ICD10CM",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map
/SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014"
        },
        "documentURI": "urn:oid:C3645705.SNOMEDCT_US.ICD10CM",
        "about": "urn:oid:C3645705.SNOMEDCT_US.ICD10CM",
        "formalName": "SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/map/SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014

```

```

/version/SNOMEDCT_US_2016_09_01_TO_ICD10CM_2014-20160901"
    }
  ],
  "complete": "COMPLETE",
  "numEntries": 2,
  "heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "mapversions",
    "parameter": [
      {
        "arg": "entity",
        "val": "22298006"
      },
      {
        "arg": "entitiesmaprole",
        "val": "MAP_FROM_ROLE"
      },
      {
        "arg": "format",
        "val": "json"
      }
    ]
  },
  "accessDate": "2017-08-07T11:29:07.216-04:00"
}
}
}

```

ResolvedValueSet Summaries

Returns all resolved value set entries with the option to page. (Place number or iteration are both possible on pagination.)

```
http://<base url>/resolvedvaluesets?maxreturn=3&format=json
```

Output

```

{
  "ResolvedValueSetDirectory": {
    "entry": [
      {
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC Questionnaire Terminology/definition/aa5e7b3f/resolution/1",
        "resolvedValueSetURI": "http://evs.nci.nih.gov/valueset/C100110",
        "resolvedHeader": {
          "resolutionOf": {
            "valueSetDefinition": {
              "content": "aa5e7b3f",
              "uri": "http://evs.nci.nih.gov/valueset/C100110",
              "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC Questionnaire Terminology/definition/aa5e7b3f"
            },
            "valueSet": {
              "content": "CDISC Questionnaire Terminology"
            }
          },
          "resolvedUsingCodeSystem": [
            {
              "version": {
                "content": "NCI_Thesaurus-17.06d"
              },
              "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
              }
            }
          ]
        }
      }
    ]
  }
}

```

```

    },
    {
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC Questionnaire Category
Terminology/definition/f8af9058/resolution/1",
      "resolvedValueSetURI": "http://evs.nci.nih.gov/valueset/C100129",
      "resolvedHeader": {
        "resolutionOf": {
          "valueSetDefinition": {
            "content": "f8af9058",
            "uri": "http://evs.nci.nih.gov/valueset/C100129",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC Questionnaire
Category Terminology/definition/f8af9058"
          },
          "valueSet": {
            "content": "CDISC Questionnaire Category Terminology"
          }
        },
        "resolvedUsingCodeSystem": [
          {
            "version": {
              "content": "NCI_Thesaurus-17.06d"
            },
            "codeSystem": {
              "content": "NCI_Thesaurus",
              "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
            }
          }
        ]
      }
    },
    {
      "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC SDTM Relationship to Subject
Terminology/definition/986819bd/resolution/1",
      "resolvedValueSetURI": "http://evs.nci.nih.gov/valueset/C100130",
      "resolvedHeader": {
        "resolutionOf": {
          "valueSetDefinition": {
            "content": "986819bd",
            "uri": "http://evs.nci.nih.gov/valueset/C100130",
            "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC SDTM Relationship
to Subject Terminology/definition/986819bd"
          },
          "valueSet": {
            "content": "CDISC SDTM Relationship to Subject Terminology"
          }
        },
        "resolvedUsingCodeSystem": [
          {
            "version": {
              "content": "NCI_Thesaurus-17.06d"
            },
            "codeSystem": {
              "content": "NCI_Thesaurus",
              "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
            }
          }
        ]
      }
    }
  ],
  "complete": "PARTIAL",
  "numEntries": 3,
  "next": "https://lexevscts2.nci.nih.gov/lexevscts2/resolvedvaluesets?page=1&format=json&maxtoreturn=3",
  "heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "resolvedvaluesets",
    "parameter": [
      {
        "arg": "maxtoreturn",
        "val": "3"
      }
    ]
  },

```

```

        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-07T11:32:07.923-04:00"
}
}
}

```

ResolvedValueSet Query

Returns a set of Resolved Value Sets based on a text match against resourceName component

```
http://<base url>/resolvedvaluesets?matchvalue=imputation&filtercomponent=resourceName&format=json
```

Output

```

{
  "ResolvedValueSetDirectory": {
    "entry": [
      {
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC ADaM Date Imputation Flag Terminology/definition/2856f3ed/resolution/1",
        "resolvedValueSetURI": "http://evs.nci.nih.gov/valueset/C81223",
        "resolvedHeader": {
          "resolutionOf": {
            "valueSetDefinition": {
              "content": "2856f3ed",
              "uri": "http://evs.nci.nih.gov/valueset/C81223",
              "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC ADaM Date Imputation Flag Terminology/definition/2856f3ed"
            },
            "valueSet": {
              "content": "CDISC ADaM Date Imputation Flag Terminology"
            }
          },
          "resolvedUsingCodeSystem": [
            {
              "version": {
                "content": "NCI_Thesaurus-17.06d"
              },
              "codeSystem": {
                "content": "NCI_Thesaurus",
                "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
              }
            }
          ]
        }
      },
      {
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC ADaM Time Imputation Flag Terminology/definition/583c0762/resolution/1",
        "resolvedValueSetURI": "http://evs.nci.nih.gov/valueset/C81226",
        "resolvedHeader": {
          "resolutionOf": {
            "valueSetDefinition": {
              "content": "583c0762",
              "uri": "http://evs.nci.nih.gov/valueset/C81226",
              "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC ADaM Time Imputation Flag Terminology/definition/583c0762"
            },
            "valueSet": {
              "content": "CDISC ADaM Time Imputation Flag Terminology"
            }
          }
        }
      }
    ]
  }
}

```

```

    },
    "resolvedUsingCodeSystem": [
      {
        "version": {
          "content": "NCI_Thesaurus-17.06d"
        },
        "codeSystem": {
          "content": "NCI_Thesaurus",
          "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        }
      }
    ]
  }
},
"complete": "COMPLETE",
"numEntries": 2,
"heading": {
  "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
  "resourceURI": "resolvedvaluesets",
  "parameter": [
    {
      "arg": "matchvalue",
      "val": "imputation"
    },
    {
      "arg": "filtercomponent",
      "val": "resourceName"
    },
    {
      "arg": "format",
      "val": "json"
    }
  ],
  "accessDate": "2017-08-07T11:36:37.852-04:00"
}
}
}

```

ResolvedValueSetDefinition Resolution

Returns the entries from terminology values in this value set.

```

http://<base url>/valueset/CDISC ADaM Date Imputation Flag Terminology/definition/2856f3ed/resolution/1?
format=json

```

Output

```

{
  "IterableResolvedValueSet": {
    "resolutionInfo": {
      "resolutionOf": {
        "valueSetDefinition": {
          "content": "2856f3ed",
          "uri": "http://evs.nci.nih.gov/valueset/C81223",
          "href": "https://lexevscts2.nci.nih.gov/lexevscts2/valueset/CDISC ADaM Date Imputation Flag
Terminology/definition/2856f3ed"
        },
        "valueSet": {
          "content": "CDISC ADaM Date Imputation Flag Terminology"
        }
      },
      "resolvedUsingCodeSystem": [
        {
          "version": {
            "content": "NCI_Thesaurus-17.06d"
          }
        }
      ]
    }
  }
}

```

```

        },
        "codeSystem": {
            "content": "NCI_Thesaurus",
            "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#"
        }
    }
},
"entry": [
    {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#C81210",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/NCI_Thesaurus:C81210",
        "namespace": "NCI_Thesaurus",
        "name": "C81210",
        "designation": "Year Month Day Imputed"
    },
    {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#C81211",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/NCI_Thesaurus:C81211",
        "namespace": "NCI_Thesaurus",
        "name": "C81211",
        "designation": "Month Day Imputed"
    },
    {
        "uri": "http://ncicb.nci.nih.gov/xml/owl/EVS/Thesaurus.owl#C81212",
        "href": "https://lexevscts2.nci.nih.gov/lexevscts2/codesystem/NCI_Thesaurus/version/17.06d/entity/NCI_Thesaurus:C81212",
        "namespace": "NCI_Thesaurus",
        "name": "C81212",
        "designation": "Day Imputed"
    }
],
"complete": "COMPLETE",
"numEntries": 3,
"heading": {
    "resourceRoot": "https://lexevscts2.nci.nih.gov/lexevscts2/",
    "resourceURI": "valueset/CDISC ADaM Date Imputation Flag Terminology/definition/2856f3ed/resolution
/1",
    "parameter": [
        {
            "arg": "format",
            "val": "json"
        }
    ],
    "accessDate": "2017-08-07T11:38:21.389-04:00"
}
}
}

```

CTS2 Bulk Term Download Extension

LexEVS 6.1 features a bulk download REST interface that is an extension to the LexEVS CTS2 service. It provides users with the ability to download entire term sets from a given coding scheme or map to a text file

Code Systems Bulk Download

Example

```
https://lexevscts2.nci.nih.gov/lexevscts2/exporter/codingscheme?codingschemes=GO
```

Map Bulk Download

Example

https://lexevscts2.nci.nih.gov/lexevscts2/exporter/map?map=NCIt_to_ChEBI_Mapping

Parameters for Rest Call

URL:

- /lexevscts2/exporter/codingscheme or
- /lexevscts2/exporter/map

Parameters:

codingschemes or map - (Optional) CodingSchemes or map to include (comma-separated). Default: all

fields - (Optional) Content fields to output. Default: [code, namespace, description, codingschemename, codingschemeuri, codingschemeversion]

separator -(Optional) One character field separator. Default: |

filename - (Optional) Output file name. Default: terminology-bulk-download.txt