

# STI Announcement Web Services

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## About

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OSTI's STI Announcement Web Services provide an easy to use mechanism to submit new announcement notices, edit existing announcement notices, and retrieve metadata for Scientific and Technical Information (STI) announcement notices. A user manipulates a record by performing HTTP operations on the web service URL and providing XML metadata; POST requests to create and modify records, and GET requests to view records.

## Getting Started

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Each STI Announcement Web Service is available from the URLs listed below.

<i>STI Announcement Web Service Name</i>	<i>Base URL</i>
DOE 241.6 Web Service	<a href="https://www.osti.gov/elink/2416api">https://www.osti.gov/elink/2416api</a>

All requests require authentication through an active E-Link user. For details or to request access to E-Link and obtain an active account, please visit <https://www.osti.gov/elink/register.jsp>.

## Using the STI Announcement Web Services

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### Authentication

Each request requires authentication through an active E-Link user. OSTI's STI Announcement Web Services support HTTP Basic authentication over SSL. With this method, the client

connects using HTTPS URLs (e.g., <https://www.osti.gov/mlink/2416api/>...). The POST and GET verb commands will pass along the standard Authentication HTTP header (base64 encoding).

Java code example:

```
// provide encoded USERNAME and PASSWORD

String auth = encoder.encode((USERNAME + ":" + PASSWORD).getBytes());
c.setRequestProperty("Authorization", "Basic " + auth);

/** write out the metadata stream */

c.setDoOutput(true);
out = new DataOutputStream(c.getOutputStream());
String s = "<records><PUT YOUR DATA HERE></records>"; // data for the request
generated in an XML-compliant string
writeString( out, s);
out.close(); out = null;
c.connect();

/** get the response and appropriate response information */

/** this example does not check for errors, can also add logic based on response code
values, see GET example */

int responseCode = c.getResponseCode();
in = new InputStreamReader(c.getInputStream());
br = new BufferedReader(in);
StringWriter writer = new StringWriter();
char[] buffer = new char[1024];
int n=0;

while ((n=br.read(buffer))!=-1) {
writer.write(buffer, 0, n); }

writer.close();
```

## Creating and Modifying Records

If authentication is successful, the input body of the request is read as an XML document, parsed, and submitted appropriately (see specific STI Announcement Web Services for details). HTML status codes (200=OK, 401=Unauthorized, 500=System error, etc.) and a XML response, which includes certain metadata fields, are returned at the end of processing each request. Additional authentication steps may be taken prior to editing a metadata record. See the specific web service you are interested in for further information.

**NOTE:** If an OSTI ID is supplied, it is assumed to be a request to modify an existing record as opposed to a new submittal.

Java code example:

```
//CREATE & SEND POST REQUEST & GET THE RESPONSE
```

```
URLConnection c = null;
DataOutputStream out = null;
InputStreamReader in = null;
BufferedReader br = null;

try {

/** build the URL to connect to */

StringBuilder url = new StringBuilder();
url.append("https://www.osti.gov/mlink/2416api");
URL u = new URL(url.toString());

c = (URLConnection) u.openConnection();
c.setRequestMethod("POST");
c.setRequestProperty("Accept", "application/xml");
c.setRequestProperty("Content-Type", "application/xml;charset=UTF-8");

/** add login authorization */

sun.misc.BASE64Encoder encoder = new sun.misc.BASE64Encoder();
```

## Requesting Metadata

Metadata can be retrieved for any existing record using a GET request and supplying the osti\_id argument on the command line. Authentication is required and is handled in the same fashion as a Create/Modify command. Metadata is returned as XML.

Java code example:

```
//Build the URL to connect to

StringBuilder url = new StringBuilder();
url.append("https://www.osti.gov/mlink/2416api");
url.append("?osti_id=1000000");
URL u = new URL(url.toString());

c = (URLConnection) u.openConnection();
c.setRequestMethod("GET");
```

```
c.setRequestProperty("Accept", "application/xml");
c.setRequestProperty("Content-Type", "application/xml;charset=UTF-8");

/** add login authorization */

sun.misc.BASE64Encoder encoder = new sun.misc.BASE64Encoder();
String auth = encoder.encode(("USERNAME" + ":" + "PASSWORD").getBytes());
c.setRequestProperty("Authorization", "Basic " + auth);
c.connect();

/** get the response and appropriate response information */

int responseCode = c.getResponseCode();
if (responseCode >= 400)
in = new InputStreamReader(c.getErrorStream());
else
in = new InputStreamReader(c.getInputStream());
br = new BufferedReader(in);

StringWriter writer = new StringWriter();
char[] buffer = new char[1024];
int n=0;

while ((n=br.read(buffer))!=-1) {
writer.write(buffer, 0, n); }

writer.close();
```

## DOE 241.6 STI Announcement Web Service Specifics

### About DOE 241.6

Announcement Notice (AN) 241.6 provides to the U.S. Department of Energy (DOE) Office of Scientific and Technical Information (OSTI) metadata needed to identify/announce publicly available datasets resulting from work funded by the DOE or performed in DOE facilities. The information, submitted through the OSTI [Data ID Service](#), allows OSTI to assign Digital Object Identifiers (DOIs) to datasets and register them with [DataCite](#) as a service to researchers. This value-added step facilitates visibility, helps ensure long-term preservation, and supports better linkage between DOE's published research results and the underlying data. The DOI assigned to each announced dataset is included in the XML response to each successful submittal.

Instructions for announcement of U.S. Department of Energy (DOE) publicly available scientific research datasets can be found at

<https://www.osti.gov/elink/F2416instruct.jsp?printerfriendly=true>.

## DOE 241.6 Required and Optional Fields

The following is a list of the required and optional fields for the DOE 241.6 STI Announcement Web Service. Required fields are designated by an asterisk (\*). The OSTI ID is a required field for all Modify requests.

Field Name	XML Field
OSTI ID+	<osti_id>
Dataset Type*	<dataset_type/>
Dataset Title*	<title/>
Creator(s)/Principal Investigator(s)*	<creators/>
Creator(s)/PI E-mail Address(es)	<creators_emails/>
Related Resource	<related_resource/>
Dataset Product Number(s)*	<product_nos/>
DOE Contract Number(s)*	<contract_nos/>
Other Identifying Numbers(s)	<other_identifying_nos/>
Originating Research Organization*	<originating_research_org/>
Availability	<availability/>
Contributor Organizations	<contributor_organizations/>
Publication Date (mm/dd/yyyy)	<publication_date/>
Language	<language/>
Country of Publication	<country/>
Sponsoring Organization(s)	<sponsor_org/>
Subject Categories	<subject_categories_code/>
Keywords	<keywords/>
Description/Abstract	<description/>
URL where dataset is posted for access*	<site_url/>
DOI	<doi/>
Dataset's File Extension	<file_extension/>
Software needed to utilize dataset	<software_needed/>
Dataset Size	<dataset_size/>
Contact Name and Position*	<contact_name/>
Contact Organization*	<contact_org/>
Contact E-mail*	<contact_email/>
Contact Phone	<contact_phone/>

\* Designates a required field

+ Required for a Modify request

## DOE 241.6 Specifics and Allowed Field Values

The Site Code is determined by the authenticated E-Link user.

**Dataset Type should be one of the following code values**

Code	Description
AS	Animations/Simulations
GD	Genome Data
IM	Interactive Data Map(s)
ND	Numeric Data
IP	Still Images/Photos

**The following fields allow for multiple entries. Multiple entries must be separated by a Semicolon**

- Creator(s)/Principal Investigator(s)
- Creator(s)/PI E-mail Address(es)
- Dataset Product Number(s)
- DOE Contract Number(s)
- Other Identifying Number(s)
- Originating Research Organization
- Contributor Organizations
- Language
- Sponsoring Organization(s)
- Subject Categories
- Keywords

**Authority values are available at <https://www.osti.gov/mlink/authorities.jsp> for the following fields**

- Country of Publication (Authority code values must be used; will be defaulted to “US”)
- Originating Research Organization
- Language
- Sponsoring Organization(s)
- Subject Categories (Authority values must be used)

## DOE 241.6 Example XML Submittal

```

<?xml version="1.0" encoding="UTF-8" ?>
<!--      Document      : DOE2416test.xml
      Created on : June 1, 2011, 8:21 AM
      Author      : vowelll
      Description:
          To test acquisition api.
-->
- <records>
- <record>
  <osti_id>0123456</osti_id>
  <dataset_type>Numeric Data</dataset_type>
  <title>This is a test record</title>
  <creators>Author, First; Author, Second</creators>
  <creators_emails>author1@example.com; author2@example.com</creators_emails>
  <related_resource />
  <product_nos>RPT-0123456</product_nos>
  <contract_nos>DOE-0123456</contract_nos>
  <other_identifying_nos />
  <originating_research_org>ORNL</originating_research_org>
  <availability>ORNL</availability>
  <contributor_organizations>OSTI</contributor_organizations>
  <publication_date>01/01/2011</publication_date>
  <language>English</language>
  <country>United States</country>
  <sponsor_org>USDOE Office of Science (SC)</sponsor_org>
  <subject_categories_code>25 Energy Storage</subject_categories_code>
  <keywords>Energy; Test; Storage</keywords>
  <description>This is a test record.</description>
  <site_url>http://www.osti.gov/dataset_example</site_url>
  <doi />
  <file_extension>html</file_extension>
  <software_needed>none</software_needed>
  <dataset_size>10G</dataset_size>
  <contact_name>John Doe</contact_name>
  <contact_org>OSTI</contact_org>
  <contact_email>john_doe@osti.gov</contact_email>
  <contact_phone>865-576-1000</contact_phone>
</record>
</records>

```

## DOE 241.6 Example XML Response

```
<?xml version="1.0" encoding="UTF-8" ?>
<!--      Document      : DOE2416test.xml
      Created on : June 1, 2011, 8:21 AM
      Author      : vowelll
      Description:
      To test acquisition api.
-->
- <records>
- <record>
  <osti_id>0123456</osti_id>
  <product_nos>RPT-0123456</product_nos>
  <title>This is a test announcement notice</title>
  <contract_nos>DOE-0123456</contract_nos>
  <doi>http://dx.doi.org/10.5072/0123456</doi>
</record>
</records>
```