

mEDRA Web Service Client Tool Installation and Use Manual

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The mEDRA web service provides an interface to the mEDRA registration services to be employed in business to business settings. Currently, it provides access to three different operations: batch upload, DOI registration, and view metadata. The batch upload operation is to be employed for triggering the DOI registration procedure in an asynchronous fashion. The registration operation is to be employed for triggering the DOI registration procedure in a synchronous fashion. Finally, the view metadata operation is used to retrieve the Onix for DOI metadata which is associated with a given DOI instance.

In order to communicate service requests and responses to the mEDRA web service, the client tool exploits the Secure Socket Layer interface, which enables the communication protocol to meet the requirements of integrity, secrecy and confidentiality. These requirements are guaranteed by the client being aware of the cryptographic certificate of the mEDRA service which is maintained into a repository which is called trust store and contains the public key certificates of the trusted authorities.

Application Requirements

The mEDRA web service client tool requires a Java Runtime Environment 1.4 or greater to be installed on the same host.

Installation Instructions

The mEDRA web service client tool is released and distributed in the form of a zip archive. Hence, a file compression utility compatible with the zip format is required for proceeding with the installation.

The mEDRA web service client tool is ready to be employed after the distribution package has been decompressed into the designated parent directory. After the installation, the files will be organized according to the following directory structure.

```
PARENT_DIRECTORY/
|
|-->medraClient/           Main installation directory
|
|   |--> doc/              Documentation files
|   |--> lib/              java software libraries employed by the client tool
|   |--> trustStore/      trust repository and related properties
|   |--> config.properties mEDRA client tool configuration properties
|   |--> medraClient.jar   mEDRA client main binary
|   |--> licence.txt      mEDRA client copyright licence
```

Tool Configuration: The `config.properties` file, which is located in the tool root directory, contains the tool default configuration so as to simplify the typical command line invocation. However, in case of need, any single default setting can be overridden by specifying the appropriate command line argument, as specified in the following section. The default configuration enables the user to set up the following properties:

- mEDRA web service account information: this group of properties enables the user to specify its own mEDRA account information as well as the access point of the mEDRA web service.
- metadata transformation label: a metadata transformation is required whenever metadata not conforming to the Onix for DOI schema specification is sent to the mEDRA web service. Any different metadata format will require a different transformation label.
- metadata content type: the mEDRA web service accepts metadata specified in SGML and XML formats. In order for the registration process to behave correctly, the appropriate metadata content type has to be specified in the service request.
- metadata validation: When the metadata sent to the mEDRA web service is a XML instance, the metadata validation can be turned on to provide the immediate validation service feature.

The user can refer to the config.properties file for having more information about each single property.

Updating the authentication certificate

This section is very important because the mEDRA authentication certificate is renewed each year for security purposes. Hence, whenever the mEDRA server certificate validity expires, it is necessary for trust store to be updated for containing the new cryptographic certificate of the mEDRA server. The procedure for updating such repository is described below. To carry out this process, the command line *keytool* command is required; this tool is distributed within any java software development kit release.

In order to change the mEDRA authentication certificate from the local trust store, the following steps have to be performed:

1. The administrator performing this operation can change to the directory where the mEDRA command line tool maintains the trust store.
2. The old, not more valid, certificate has to be removed from the trust store. This can be done using the command

```
keytool -delete -keystore cacerts -alias medra -storepass changeit
```

3. Employing a web browser, access the <https://www.medra.org> url and save the mEDRA X509 certificate using the “base 64” encoding.
4. Employing keytool, the new mEDRA certificate has to be imported into the trust store. This can be done using the command

```
keytool -import -file medra.cer -alias medra -keystore cacerts -storepass changeit
```

Employment Instructions

Once installed and configured, the mEDRA web service client is ready to be used. In order to display the command syntax, the user can use the command

```
java -jar medraClient.jar
```

The tool provides the three functionalities of synchronous registration, asynchronous registration, and view metadata, which are respectively characterized by the command switches *-r*, *-U*, and *-v*.

- Synchronous registration: this command transfers the metadata to the mEDRA DOI registration server and triggers a DOI registration respecting synchronous semantics. The tool execution terminates when the registration operation has terminated and returns a

result and a termination status code which depend on the outcome of the registration process. This registration semantics has been designed to manage DOI registrations of single metadata records.

- Asynchronous registration: this command transfers the metadata to the mEDRA DOI registration server and triggers a DOI registration respecting asynchronous semantics. The tool execution terminates when the metadata transfer operation has terminated and returns a result and a termination status code which depend on the outcome of the data transfer process. The outcome of the registration process will be notified by email, as the registration process will be terminated. This registration semantics has been designed to manage DOI registrations when batch of metadata records are submitted.
- View Metadata: given a DOI, this command retrieves from the mEDRA metadata repository the last metadata record which has been submitted for that DOI.

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