

4 - Installing LexEVS 5.x Remote API

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Introduction

This document is a section of the [LexEVS 5.x Installation Guide](#).

This section provides requirements, instructions, and troubleshooting information for installing the LexEVS Remote API environment.

Preliminary Considerations

- The [LexEVS 5.x Supported Platforms](#) are the same for this environment as they are for the Local Runtime.
- Before installing the LexEVS Remote API environment you must have a [LexEVS Local Runtime](#) installed and working.
- It is not required that you load a terminology into the Local Runtime in order to complete the installation of the Remote API environment. However, using the Remote API requires that a terminology be loaded into the Local Runtime.
- The Remote API environment has additional [LexEVS 5.x Prerequisite Software Supported](#) beyond the Local Runtime. The additional web application server does not have install steps given in this guide. The web application server can be on the same server or a different server from the Local Runtime.
- Complete the [#Downloading and Installing the LexEVS Remote API](#) steps below.

Once you have completed the additional prerequisite software install, the Remote API environment install steps, and the verification test as described in this guide then you should be ready to start using the Remote API features to meet the needs of your application. Not counting prerequisite software products the installation and verification should not take more than 30 minutes.

Downloading and Installing the LexEVS Remote API

Step	Action
<div>1. Download the latest version of the LexEVS Remote API WAR file from the right. You have a choice between WAR files tailored for JBoss or Apache Tomcat installations. The location you have chosen to save this on your computer will be referred to as the <code>\$SAVE_DIRECTORY</code>. Our command examples will use <code>\$cratch</code> as this directory.</div> <div><div><div><div><div></div><div>Note</div></div><div>Access to the downloads does not require an account. If you are having trouble downloading files then you may need to disable pop-up blockers or check any firewall settings at your site.</div></div></div></div>	<div>LexEVS Remote API Includes the Java runtime and dependencies, the Java distributed API, and the caCORE SDK-generated services. This can be deployed to an Apache Tomcat or JBoss container. lexevsapi51.tomcat.war lexevsapi51.jboss.war</div>
<div>2. Shut down your application or servlet container. This presumes that you have already installed a web server as outlined in LexEVS 5.x Prerequisite Software Supported. The command to do the shut down will be web server specific. See the documentation for your web server for information on how to do this. There may be many alternatives. JBoss example:</div> <div><ul style="list-style-type: none">• Windows: <code>shutdown.bat -S</code>• Unix: <code>./shutdown.sh -S</code> If you experience Java errors then the server may already be down.</div>	<div></div>

3. Rename the WAR file. These files are distributed with an application server designation in their name for clarity while downloading them. Change to the `SAVE_DIRECTORY` and rename the file, like this:

```
rename {SAVE_DIRECTORY}
/lexevsapi51.{WEB_SERVER}.
war {SAVE_DIRECTORY}
/lexevsapi51.war}
```

JBoss example:

- Windows:
rename c:\scratch\lexevsapi51.
jboss.war lexevsapi51.war
- Unix:
move /scratch/lexevsapi51.jboss.
war lexevsapi51.war



Note

Consider other names as well. Many application servers use the deployed name as part of the URL, so if you would rather it be a different name then you should rename the WAR file to that.

```
C:\scratch>rename c:\scratch\lexevsapi60.jboss.war lexevsapi60.war
C:\scratch>_
```

4. Copy the WAR file to the appropriate web application server directory, like this:

```
copy {SAVE_DIRECTORY}
\lexevsapi51.war
{WEB_SERVER_HOME}\
{DEPLOYMENT_HOME}
```

...where:

`SAVE_DIRECTORY` is the location of the downloaded file.

`WEB_SERVER` is the brand of the web server.

`WEB_SERVER_HOME` is your application server home directory.

`DEPLOYMENT_HOME` is the Web Archive deployment directory for your application server.

JBoss example:

- Windows:
copy c:\scratch\lexevsapi51.war c:
\jboss-4.0.5.
GA\server\default\deploy
- Unix:
copy /scratch/lexevsapi51.war
/jboss-4.0.5.GA/server/default
/deploy

```
C:\scratch>copy c:\scratch\lexevsapi60.war c:\jboss-5.1.0.GA\server\default\depl
oy
1 file(s) copied.
C:\scratch>cd \jboss-5.1.0.GA\server\default\deploy
C:\jboss-5.1.0.GA\server\default\deploy>dir *.war
Volume in drive C has no label.
Volume Serial Number is F034-BFBA

Directory of C:\jboss-5.1.0.GA\server\default\deploy

10/22/2010  02:55 PM    <DIR>                jmx-console.war
06/23/2010  12:21 PM         25,080,822 lexevsapi60.war
               1 File(s)          25,080,822 bytes
               1 Dir(s)   58,763,886,592 bytes free

C:\jboss-5.1.0.GA\server\default\deploy>_
```

5. Create a text file named `lexevs.properties` in the `WEB_SERVER_CLASSPATH` to set the location of the LexEVS configuration. The `WEB_SERVER_CLASSPATH` is a location along the class path for your web application server. This whole path including the file name will be called `LEXEVS_PROPERTIES_HOME` for the rest of these instructions.

JBoss example:

- Windows:
`c:\jboss-4.0.5.
GA\server\default\conf\lexevs.
properties`
- Unix:
`/jboss-4.0.5.GA/server/default/conf
/lexevs.properties`
Set `LG_CONFIG_FILE` to the path of the `lbconfig.props` file of your LexEVS installation like this:

```
LG_CONFIG_FILE=  
{LEXEVS_HOME}  
\resources\config\lbconfig  
.props
```

... where `LexEVS_HOME` is the install directory of LexVES.
Copy/paste the examples below as a starting point for this file:

- Windows:
`LG_CONFIG_FILE=c:\\LexEVS\\5.
1\\resources\\config
lbconfig.props`



Note

Notice the back slash escape character required for a Windows, Java environment

- Unix:
`LG_CONFIG_FILE=/LexEVS/5.1
/resources/config/lbconfig.props`

6. (OPTIONAL) The `lexevs.properties` file is also used to add security for any coding scheme. This is not a highly used function. For each coding scheme a security implementation class name can be set to enable security like this:

```
{CODING_SCHEME_NAME}=  
{SECURITY_IMPLEMENTATION}
```

...where `CODING_SCHEME_NAME` is the name or URI of the terminology.

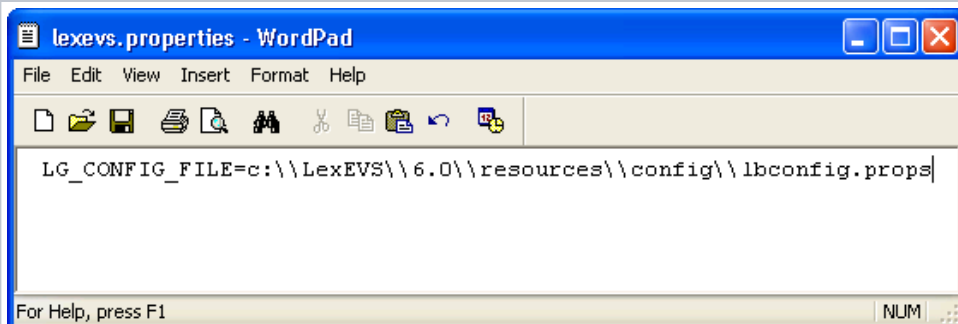
`SECURITY_IMPLEMENTATION` is a class that implements the interface `gov.nih.nci.system.dao.security.DAOSecurity`.

For all ways of accessing the coding scheme, security must be set up. The example at the right shows access by Name, URI, and Formal Name, but others are possible too.



Note

Coding schemes can be added or changed later after a coding scheme or terminology is loaded into LexEVS.



```
MedDRA=gov.nih.nci.system.dao.security.MedDRASecurity  
urn\:oid\:2\.16\.840\.1\.113883\.6\.163=gov.nih.nci.system.dao.security.  
MedDRASecurity  
Medical\ Dictionary\ for\ Regulatory\ Activities\ Terminology\ \ (MedDRA\  
)=gov.nih.nci.system.dao.security.MedDRASecurity
```

7. Adjust the properties-service.xml file. This file is likely to be found in the following directory but may be different for some servers:

```
{WEB_SERVER_HOME}\  
{DEPLOYMENT_HOME}
```

JBoss example:

- Windows:
c:\jboss-4.0.5.
GA\server\default\deploy\properties
-service.xml
- Unix:
/jboss-4.0.5.GA/server/default
/deploy/properties-service.xml
Add a line to the file in the same part of the
XML where other properties are set like this:

```
<attribute name="  
Properties">org.LexGrid.  
LexBIG.caCore.Properties=  
{LEXEVS_PROPERTIES_HOME}<  
/attribute>
```

...where LEXEVS_PROPERTIES_HOME is the
location and file name of lexevs.properties
established in a previous step.
In Tomcat placing the file in the conf dir or the /
webapps/lexevsapi5x/WEB-INF/classes
directory should suffice.

JBoss example:

```
<attribute name="Properties">org.  
LexGrid.LexBIG.caCore.Properties=C:  
\jboss-4.0.5.  
GA\server\default\conf\lexevs.  
properties</attribute>  
is added to this file between the <mbean> tags.
```



Note

In some server installations you
may not have authority to modify
this file. In that case you can
simply move the lexevs.properties
file somewhere on the web
application servers class path.

```
properties-service.xml - WordPad  
File Edit View Insert Format Help  
<!--  
    | Set raw properties file style properties.  
  
<attribute name="Properties">  
  
    my.project.property=This is the value of my property  
    my.project.anotherProperty=This is the value of my other propert  
  
</attribute>  
  
-->  
  
</mbean>  
  
<attribute name="Properties">  
    org.LexGrid.LexBIG.caCore.Properties=c:\jboss-5.1.0.GA\server\default  
</attribute>  
  
</server>
```

Testing the LexEVS Remote API

1. Start your application or servlet container if
it is not already started. The start command
will be web server specific. See the
documentation for your web server for
information on how to do this.

JBoss example:

- Windows:
Run.bat -c default
- Unix:
./Run.sh -c default

```
Command Prompt - run.bat -c default  
C:\jboss-5.1.0.GA\bin>run.bat -c default  
=====
```

```
JBoss Bootstrap Environment  
JBASS_HOME: C:\jboss-5.1.0.GA\bin\..  
JAVA: c:\jdk1.6.0_20\bin\java  
JAVA_OPTS: -Dprogram.name=run.bat -server -Xms128m -Xmx512m -Dsun.rmi.dgc.cli  
ent.gcInterval=3600000 -Dsun.rmi.dgc.server.gcInterval=3600000  
CLASSPATH: c:\jdk1.6.0_20\lib\tools.jar;C:\jboss-5.1.0.GA\bin\run.jar  
=====
```

```
16:57:42.301 INFO [Server] Starting JBoss (MX MicroKernel)...  
16:57:42.301 INFO [Server] Release ID: JBoss [Zion] 5.1.0.GA (build: CUSTag=Bra  
nch_4_0 date=200610162339)  
16:57:42.301 INFO [Server] Home Dir: C:\jboss-5.1.0.GA  
16:57:42.301 INFO [Server] Home URL: file:/C:/jboss-5.1.0.GA/  
16:57:42.301 INFO [Server] Patch URL: null  
16:57:42.316 INFO [Server] Server Name: default  
16:57:42.316 INFO [Server] Server Home Dir: C:\jboss-5.1.0.GA\server\default  
16:57:42.316 INFO [Server] Server Home URL: file:/C:/jboss-5.1.0.GA/server/defa  
ult/  
16:57:42.316 INFO [Server] Server Log Dir: C:\jboss-5.1.0.GA\server\default\log
```

2. Verify the installation by opening a browser to

```
http://{SERVER_ADDRESS}/  
{WAR_FILE_DEPLOYED}
```

...where SERVER_ADDRESS is the address of your server (domain and optionally the port number)

WAR_FILE_DEPLOYED is the name of the WAR file you placed in the server directories for deployment.

For example:

```
http://localhost:8080  
/lexevsapi51
```

If you are using localhost then your browser must be running on the same server as LexEVS.

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EVS Enterprise Vocabulary Services

HOME JAVA DOCS

WELCOME TO LexEVS

SELECT CRITERIA
Continue

LexEVS is a collection of programmable interfaces that provide users with the ability to access controlled terminologies supplied by the NCI Enterprise Vocabulary Services (EVS) Project. The controlled terminologies hosted by the NCI EVS Project are published via the Open-Source LexEVS Terminology Server.

The LexEVS 6.0 Release includes the following components:

- LexEVS Java API – A Java interface which provide the entry points for programmatic access to all system features and data.
- LexEVS Distributed API - The Distributed LexEVS Portion of LexEVS API. This interface is a framework for calling LexEVS API methods remotely, along with enforcing security measures.
- LexEVS caCORE SDK Services - Includes:
 - REST Interface
 - SOAP Interface
 - RMI Interface - provides:
 - Query-by-Example (QBE)
 - HQL Interface
 - Hibernate Detached Criteria
 - SDK CQL
 - caGrid CQL
- LexEVS Grid Service - An interface which uses the caGRID infrastructure to provide access to LexEVS content.

References:

- [LexEVS API Forge site](#) - Contains news, information, documents, defects, feedback, and reports
- [LexEVS API Download site](#) - Contains documents, information, and downloads for LexEVS.
- [caBIG Vocabulary Knowledge Center](#) - Contains LexEVS information provided by Vocabulary Knowledge Center
- [LexEVS 6.0 Release Notes](#) - Contains the release history information, highlights New Features and Updates, Bug fixes since the last release, identifies Known Issues, and provides information on documentation and other helpful reference links.
- [caGRID Portal](#) – Link to the caGrid Portal/Browser
- [LexEVS 6.0 Data Grid Service URL](#) - URL of the LexEVS Data Grid Services
- [LexEVS 6.0 Analytical Grid Service URL](#) - URL of the LexEVS Analytical Grid Services

NOTE: This page allows users to conduct simple queries against the underlying API. Advanced level searching is NOT supported here but, is available by accessing the EVS API programmatically or by using the [NCI Term Browser](#).

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If you see the Enterprise Vocabulary Services "Welcome to LexEVS" web page then you have successfully installed the LexEVS Remote API. Congratulations!

Troubleshooting

- If the Local Runtime environment is properly installed and tested then the Remote API environment should have few problems.
- If you receive deployment errors in JBoss and are unable to see the EVS home page then you may not have configured the properties attribute in JBoss's properties-service.xml.
 - *You may also need to adjust the path in lexevs.properties where lbconfig.props location is defined.