

## MetamorphoSys - The UMLS Installation and Customization Program

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MetamorphoSys is the UMLS installation wizard and Metathesaurus customization tool included in each UMLS release. It installs one or more of the UMLS Knowledge Sources. When the Metathesaurus is selected, it enables you to create customized Metathesaurus subsets. Please use only the version of MetamorphoSys distributed with the release.

Users customize their Metathesaurus subsets for two main purposes:

- 1 To exclude vocabularies from output that are not required or licensed for use in a local application.

The Metathesaurus consists of a number of files, some of which are extremely large; excluding sources can significantly reduce the size of the output subset. Given the number and variety of vocabularies reflected in the Metathesaurus, it is unlikely that any user would require all, or even most, of its more than 100 vocabularies. In addition, some sources require separate license agreements for specific uses, which a UMLS user may not wish to obtain. These are clearly indicated in the Appendix to the License Agreement.

- 2 To customize a subset using a variety of data output options and filters.

To identify vocabularies that may not be needed in a customized subset, read the License Agreement and its Appendix, and refer to Source Vocabularies page of the current UMLS release documentation.

The RRF Browser, which allows users to find a term within a customized Metathesaurus subset or any vocabulary in the RRF format, is also included in MetamorphoSys.

There are no license restrictions on the MetamorphoSys code. We hope that users will acknowledge the NLM source, in the spirit of the GNU Public License (GPL).

### 8.1 MetamorphoSys Requirements

MetamorphoSys has been tested on the following operating systems:

- Sun Solaris 9
- Windows XP, NT, Vista, and 2000
- Linux, all releases are fully tested under Red Hat Workstation Linux; other Linux releases may work equally well.
- Macintosh OS X (Leopard, Snow Leopard)\*\*

It is implemented in Java and requires the run-time JRE version included in the release (except for the Macintosh, which licenses its own JRE). Solaris and Windows Java Runtime Environment — <http://javasoft.com>.

\*\*Macintosh note: **MetamorphoSys requires Java 1.6.**

You may execute MetamorphoSys from the UMLS DVD-ROM (which contains the application and the compressed UMLS Knowledge Sources data files) or use a high-speed Internet connection to download files from the UMLS Web site downloads page. To ensure proper functionality users should download and extract all UMLS data and zip files to the same

directory. Because downloads on a T1 line with 1 megabit per second throughput will require over 5 hours, we expect that MetamorphoSys will usually be run from the DVD.

To use the DVD, you must have a DVD reader and at least 30 GB of free disk space. Multiple runs that create multiple subsets of the Metathesaurus will need even more space. For reasonable performance, we suggest these minimum requirements:

- A CPU of 2GHz or higher
- 6x (or better) DVD drive
- 2 GB of RAM, preferably more
- A DVD reader which can read the standard UDF DVDs

DVD options allow you to (1) install the UMLS Knowledge Sources from the DVD, (2) copy MetamorphoSys .nlm data format files to local storage, and (3) copy the installation program and files to local storage. This may be useful for multiple runs or subsetting an existing subset, and it may improve performance time.

All file sizes are checked at installation. The Validate Distribution option allows users to verify the integrity of .nlm files downloaded from the UMLS Web site or copied from the UMLS DVD. It compares special MD5 signatures to those in the release .MD5 file. CHK file, and is a useful first step for trouble-shooting when problems occur with a UMLS installation.

If the UMLS release is downloaded from the UMLS Web site downloads page, it must include these files\*, in the same directory:

- mmsys.zip (zipped MetamorphoSys application)
- 2009aa-1-meta.nlm (compressed Metathesaurus data)
- 2009aa-2-meta.nlm (compressed Metathesaurus data)
- 2009aa-otherks.nlm (compressed Semantic Network and SPECIALIST Lexicon)
- 2009AA.CHK
- 2009AA.MD5
- Copyright\_Notice.txt
- README.txt

The mmsys.zip file is first unzipped to local storage and the MetamorphoSys application started. To ensure proper functionality users must unzip mmsys.zip to the same directory as the other downloaded files.

\*File names for the 2009AA release are shown.

## 8.2 Starting MetamorphoSys

Open a terminal window and change to the root directory of the DVD-ROM. Type the appropriate command for your platform:

- ./run\_mac.sh (or click on the run\_mac.command file)
- ./run\_linux.sh
- ./run\_solaris.sh

Press the return key.

A new window will appear. This may take a few minutes since a good deal of software must load before the Welcome screen appears.

- Windows run.bat

On Windows machines with Autorun enabled, the DVD will start automatically. If it does not, go to the root directory of the DVD-ROM and click on the file named run.bat.

### 8.3 MetamorphoSys Help

Help is available at the UMLS Web site. Users may also receive assistance from Webcasts, the UMLS Listserv, and the various MetamorphoSys Tutorials. We are developing additional Web resources based on user input.