caAdapter Model Mapping Service 4.4

Installation Guide

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Contents

Introduction

This installation guide outlines the supported configurations and technical installation instructions for caAdapter Model Mapping Service (MMS) 4.4. Directions for validating the caAdapter installation are also included.

Overview of caAdapter

caAdapter is an open source tool set that includes model mapping services for mapping an object to a data model in support of building caCORE-like applications. It also includes mapping and transformation services that facilitate mapping and transformation among different kinds of data sources.

caAdapter MMS 4.4 adds support for the datatypes included in the 21090 International Datatype Standard (ISO 21090). For more information, see the *Pioneer ISO 21090 Tooling Support User Guide*.

caAdapter supports NCI CBIIT's mission of creating standards-based infrastructure to facilitate medical research data exchange. For more information about the caAdapter tool set, see the *caAdapter Model Mapping Service 4.4 User's Guide*.

caAdapter MMS 4.4 Tested Platforms

caAdapter MMS 4.4 has been tested on the system platforms with the stated software and hardware requirements listed in *Table 1*.

	NCI CBIIT Windows Server	NCI CBIIT Linux App Server
Model	DELL Optiplex GX270	HP Proliant ML 330
CPU	1 x Intel® Pentium™ 2.8 GHz	1 x Intel® Xeon™ Processor 2.80 GHz
Memory	3.2 GB	4 GB
Local Disk	System = 40 GB	System = 2 x 36 GB (RAID 1) Data = 2 x 146 (RAID 1)
Network	100mb / full duplex	100mb / full duplex
OS	Windows 2000 Professional	Red Hat Linux ES 3
Resolution **(Recommended)**	1280 x 1024 1024 x 768	1600x1200 1400x1050 1280x960 1280x864

	NCI CBIIT Windows Server	NCI CBIIT Linux App Server
Resolution	800 x 600	800 x 600
(NOT Recommended)	640 x 480	640 x 480

Table 1 caAdapter MMS 4.4 Tested Platforms

caAdapter MMS 4.4 Software Requirements

Third-party software, detailed in *Table 2,* is required to run the binary, source, and Windows caAdapter distributions, but is not distributed with caAdapter. You must download and install this software before using caAdapter. Visit the website below to review the license agreement. The version information is in accordance with the NCI CBIIT technology stack.

Software Name	***Version***	***Description/URL***	***Directory***
Java 2 Platform Enterprise Edition (J2EE) or Standard Edition (J2SE)	1.5.0_04	The J2SE Software Development Kit (SDK) supports creating J2SE applications http://java.sun.com/j2se/	If your root directory in Windows is `C:\`, then install to the `C:\jdk1.5.0_04` Java home directory

Table 2. Required Software for All caAdapter Distributions

Setting Environment Variables

You must verify that the JAVA_HOME and ANT_HOME environment variables are set and then you must add them to your PATH.

Setting the JAVA_HOME Environment Variable

The JAVA_HOME variable is required for all caAdapter distributions. Do the following to set this variable and add it to your PATH in Windows.

Step	***Action***
1.	Right click **My Computer > Properties** and select the **Advanced** tab.
2.	Click the **Environment Variables** button.
3.	**JAVA_HOME** must be listed in the User variables or System variables section of the dialog box. To add a new variable, click the **New** button below either section.
4.	In the **New User Variable** dialog box, add the **Variable** and **Variable Value** for your home directory. Examples: **Variable** = ***JAVA_HOME***; **Variable Value** = ***C:\jdk1.5.0_04***
5.	Find the PATH environment variable, double-click it or click the **Edit** button, and add ***%JAVA_HOME%\bin*** to the end of its value. Click all **OK** buttons to confirm the changes.
6.	To verify that the **PATH** statement listed in the **Environment Variables** dialog box includes, open a command window (**Start > Command Prompt**). Type ***path*** at the prompt and hit **enter** to display your path. For example, ***C:\jdk1.5.0_04*** should be at the end of your path. If you were successful, you can run `java` anywhere in your system. To verify the java version type `java –version` at the command prompt.

Required Software for the Source Distribution

Third-party software, detailed in *Table 3,* is required to run the caAdapter source distribution but is not distributed with caAdapter. You must download and install this software before using caAdapter. Visit the websites below to review the license agreements. The version information is in accordance with the NCI CBIIT technology stack.

Software Name	***Version***	***Description/URL***	***Example Directory***
Ant	1.6.2	Apache Ant is a Java-based build tool http://ant.apache.org/	If your root directory in Windows is C:\, then install to C:\apache-ant-1.6.2 Ant home directory.
SQLeonardo	sqleonardo.2007.01	SQLeonardo is a graphical tool that lets you query databases. http://sourceforge.net/projects/sqleonardo/	Copy sqleonardo.jar after unzipping to caAdapter lib directory.

Table 3 Required Software for caAdapter Source Distribution

Setting the ANT_HOME Environment Variable

The ANT_HOME variable is required to build your local application with the caAdapter source distribution using Apache Ant. Do the following to set this variable and add it to your PATH in Windows.

Step	***Action***
1.	Right click **My Computer > Properties** and select the **Advanced** tab.
2.	Click the **Environment Variables** button.
3.	**ANT_HOME** must be listed in the User variables or System variables section of the dialog box. To add a new variable, click the **New** button below either section.
4.	In the New User Variable dialog box, add the variable and variable value for your home directories. Examples: **Variable =** ***ANT_HOME*** **Variable Value =** ***C:\apache-ant-1.6.2***
5.	Find the **PATH** environment variable, double-click it or click the **Edit** button, and add **%ANT_HOME%\bin** to the end of its value. Click all **OK** buttons to confirm the changes.
6.	To verify that the **PATH** statement listed in the **Environment Variables** dialog box includes **ANT_HOME**, open a command window (**Start > Command Prompt**). Type ***path*** at the prompt and press **Enter** to display your path. For example, ***C:\apache-ant-1.6.2\bin*** should be at the end of your path. If you were successful, you can run ant anywhere in your system.

Downloading caAdapter

Complete the following steps to download caAdapter.

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1.</td><td>Go to the NCI CBIIT download web site: http://ncicb.nci.nih.gov/download/index.jsp.</td></tr>
<tr><td>2.</td><td>Enter your email, name, and institution. Click Enter the Download Area.</td></tr>
<tr><td>3.</td><td>Select Download from the caAdapter section.
Select the box labeled Checking this box indicates that you agree to the above terms to indicate agreement with the caAdapter license.</td></tr>
<tr><td>4.</td><td>Select the appropriate distribution as listed below and save it to a temporary directory on your computer (for example, <code>C:\temp</code> in Windows).

Binary Distribution: The caAdapter MMS 4.4 binary distribution file contains the binary code, Javadocs, Release Notes, example messages, and licenses.

<table>
<tr><th>Binary Zip File Name</th><th>Description</th></tr>
<tr><td>CaadapterMMSv4.4_bin.zip</td><td>Binary file</td></tr>
</table>

Source Distribution: The caAdapter MMS 4.4 source distribution file contains the source java code, build.xml, Javadocs, Release Notes, readme.txt, example messages, and licenses.

<table>
<tr><th>Source Zip File Name</th><th>Description</th></tr>
<tr><td>CaadapterMMSv4.4_src.zip</td><td>Source file</td></tr>
</table>

Windows Distribution: The caAdapter MMS 4.4 Windows distribution file contains binary code, release notes, readme.txt, example messages, and licenses.

<table>
<tr><th>Binary Zip File Name</th><th>Description</th></tr>
<tr><td>CaadapterMMSv4.4.msi</td><td>Windows installer file</td></tr>
</table>
</td></tr>
</table>

Installing caAdapter

Procedures for installing the source, binary, and Windows distributions of caAdapter follow in this section.

Installing the Source and Binary Distributions

Extract the contents of the caAdapter source or binary distribution zip file to the directory in your file system. The selected directory will be your caAdapter home directory. For example, you can select your caAdapter home directory as `C:\caadapter`. *Table 4* contains the structure of your caAdapter home directory after installation of the source distribution. If you install the binary distribution, the *build, dist*, *src* and *test* directories are not created.

Directory	***Contents***
build	Binaries (`.class` files) (only for source distribution and is created at runtime)
conf	Application configuration files
dist	Contains `.jar`, `.war` files, and the `run.bat` file. (only for source distribution and is created at runtime)
doc	caAdapter documentation and help system
lib	Java libraries and dependencies
src	Source code (only for source distribution and is created at installation time)
test	Codes of testing programs (only for source distribution and is created at installation time)
workingspace	Default directory where you can save project files. It also contains an `examples` directory with sample data.

Table 4. Directory Structure of the caAdapter Source Distribution

Installing the Windows Distribution

The Windows distribution file is a packaged Windows Installer File (.msi). Double-click the `.msi` file and follow the instructions provided to complete the installation. The Windows installation wizard will install caAdapter to your selected location and add a caAdapter MMS icon to your start-up menu.

Verifying the Installation

Perform the process appropriate to the caAdapter distribution you are using to ensure that your installation of caAdapter was successful.

Verifying the Binary Installation

Perform the following steps to launch caAdapter.

Step	*Action*
1.	In a command prompt window, enter ***`cd {home_directory}`*** to go to your caAdapter home directory (for example, in Windows `C:\caadapterMMS4.4`).
2.	Enter ***`run.bat`*** caAdapter appears.

Verifying the Source Installation

Perform the following steps to build your local application and launch caAdapter.

Step	*Action*
1.	In a Command Prompt window, enter cd {home_directory} to go to your caAdapter home directory (for example, in Windows C:\caadapterMMS4.4Src).
2.	Enter **`ant`**
3.	Change to dist directory, enter **`cd dist`**
4.	Enter **run.bat** caAdapter appears.

Building the Java Web Start Deployment

If you installed the source distribution successfully, you can optionally build the Java Web Start deployment WAR file.

The web server requires that the Java Web Start WAR file be digitally signed to assert that the code is trusted. Perform the following steps to digitally sign the WAR file using an existing digital certificate or a temporary one.

Generating the Digital Key

Note: This step is only required if you need a temporary digital certificate. If you signed the WAR file with an existing digital certificate, go to the next step, "Building the Java Web Start Deployment WAR File"

The following steps explain how to set up your parameters and generate a digital certificate using the Java Key Generator.

Step	*Action*

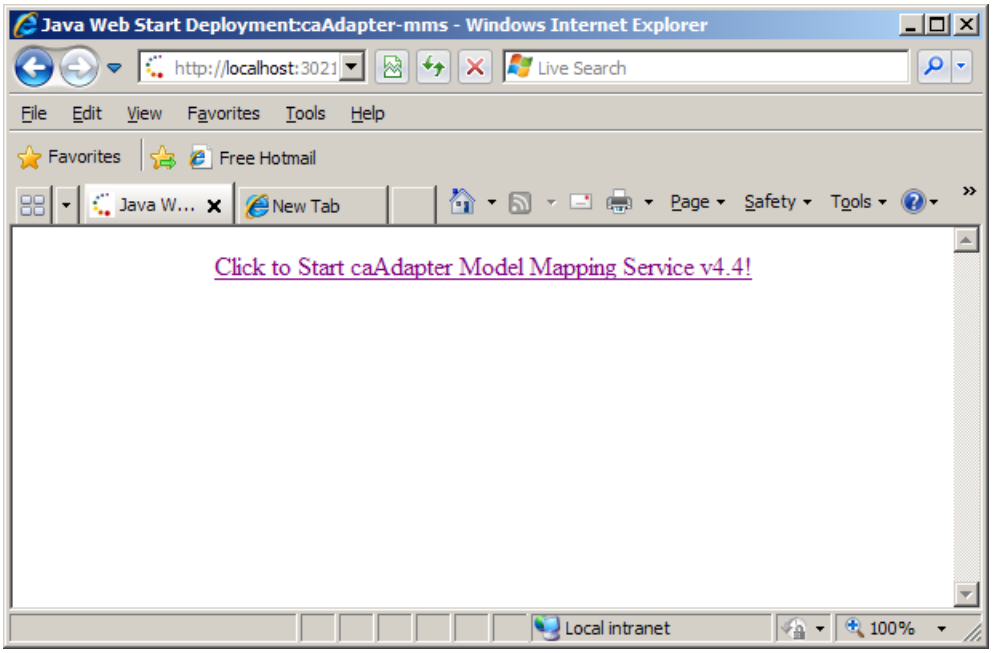
1.	The Java Key Generator requires the certificate publisher's information to create a digital certificate and the keystore's information to save the certificate. Modify `build.properties` in the caAdapter home directory to set the parameter. The resulting `build.properties` should be as follows:
	`#The following properties are parameters of the digital certificate publisher`
	`certificate.subject.CN=tempPublisher`
	`certificate.subject.OU=caAdapter`
	`certificate.subject.O=nih.gov`
	`certificate.subject.C=US`
	
	`#The following properties are parameters of the keystore`
	`signjar.alias =myKeyAlias`
	`signjar.storepass =myKeyPass`
	`signjar.keystore =myKeyStore`

2.	Run the following command in the caAdapter home directory: `ant generate-keys –Dgenerate-keys=true` If the command executes successfully, a keystore is created in the file called "myKeyStore". This keystore is programmatically accessible using this alias: "myKeyAlias" and this passphrase: "myKeyPass".

Building the Java Web Start Deployment WAR File

Step	*Action*

1.	If in the previous step you generated a temporary digital certificate to sign the Java Web Start application, go to Step 2 below.
	If you used an existing digital certificate to sign the Java Web Start application, modify the `build.properties` file with the correct keystore access information. The resulting `build.properties` file should be as follows:
	`# The following properties are parameters of keystore`
	`signjar.alias =existingKeyAlias`
	`signjar.storepass =existingKeyPass`
	`signjar.keystore =existingyKeyStore`

Step	Action
2.	Run the following command in the caAdapter home directory `ant build-all` If the command executes successfully, caadapter-mms.war file is created in the *dist* directory.
3.	Copy caadapter-mms.war to the deployment directory of your J2EE web server.
4.	Launch the caadapter-mms web application. For example, if you run the J2EE web server on your local machine on port 8080, you can perform step 4 above using http://localhost:8080/caadapter-mms/. 

Verifying the Windows Installation

Perform the following steps to launch caAdapter.

Step	Action
1.	Navigate to the caAdapter MMS 4.4 shortcut from the **Start** menu and click **caAdapter MMS 4.4**. caAdapter appears.
2.	If you can see the caAdapter user interface, your installation was successful. See the *caAdapter Model Mapping Service 4.4 User's Guide* for detailed information on using caAdapter.

Contacting NCI CBIIT Application Support

http://ncicbsupport.nci.nih.gov/sw/

Telephone: 301-451-4384
Toll free: 888-478-4423