CAADAPTER MMS V 4.1.1

Installation Guide

Center for Biomedical Informatics
and Information Technology

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Contents

Introduction

This installation guide outlines the supported configurations and technical installation instructions for caAdapter 4.1.1. Directions for validating the caAdapter installation are also included.

Overview of caAdapter

caAdapter is an open source tool set including Model Mapping Services (MMS) to map an object to a data model in support of building caCORE-like applications and Mapping and Transformation Services (MTS) to facilitate mapping and transformation among different kinds of data sources.

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 4.1.1 User's Guide*.

caAdapter 4.1.1 Tested Platforms

caAdpater 4.1.1 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
Resolution (NOT Recommended)	800 x 600 640 x 480	800 x 600 640 x 480

Table 1 caAdapter4.1.1 Tested Platforms

caAdapter Software Requirements

Some third-party software is required to run caAdapter that is not distributed with caAdapter. You must download and install this software prior to using it with caAdapter. You must visit each third-party software website to review the license agreement. *Table 2* contains detailed information on the software and URL hyperlinks (for download). The versions 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
JGraph	5.12.1	Jgraph is a freely available Java Graph Component for the visualization and layout of graphs http://www.jgraph.com/downloads.html	Copy jgraph.jar to caAdapter lib 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 distribution. Perform the following steps 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 Source Distribution

Some additional third part software is required for caAdapter source distribution and they are not distribute with caAdapter source distribution. They have to be downloaded and installed prior to using the them with caAdapter source distribution. You are required to visit each site of the third party software to review the license agreements. *Table3* contains detailed information on the software and URL hyperlinks (for download). The version 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

Table3 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. Perform the following steps 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.

Step	Action
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 hit **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.

Step	Action
1.	Go to the NCI CBIIT download web site http://ncicb.nci.nih.gov/download/index.jsp.
2.	Enter your email, name, and institution. Click **Enter the Download Area**.
3.	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.
4.	Select the appropriate distribution as listed below and save it to a temporary directory on your computer (for example, `C:\temp` in Windows). • **Binary Distribution**: The caAdapter binary distribution file contains the binary code, Javadocs, Release Notes, example messages, and licenses.

Binary Zip File Name	Description
CaadapterMMSv4.1.1_bin.zip	Binary file

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

Source Zip File Name	Description
CaadapterMMSv4.1.1_src.zip	Source file

Windows Distribution: The caAdapter windows distribution file contains binary code, Release Notes, readme.txt, example messages, and licenses.

Binary Zip File Name	Description
CaadapterMMSv4.1.1.msi	Windows installer file

Installing caAdapter

Complete the appropriate steps for your distribution to install caAdapter.

Installing the Source and Binary Distributions

Extract the contents of the caAdapter source or binary distribution zip file to your root directory. For example, if your root directory in Windows is `C:\`, then your caAdapter home directory becomes `C:\caadapter`. (**Note**: The `caadapter` directory is created for you.) *Table 3* contains the directory structure after installation.

Installing the Windows Distribution

The windows distribution file is packaged Windows Installer File (.msi). Double-click the `.msi` file and follow the instructions provided to complete installation. *Table 3* contains the directory structure after installation.

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. (Source distribution only)
doc	caAdapter documentation and help system
etc	Important supplementary files (only for source distribution and the its contents will be packed with compiled codes as build the project)
lib	Java libraries and dependencies
src	Source code (`.java` files) (only for source distribution)
workingspace	Default directory where you can save project files. It also contains an `examples` directory with sample data.
build	Binaries (`.class` files) (only for source distribution and is created at runtime)
conf	Application configuration files

Table 3. Directory Structure of the caAdapterSource Distribution

Verifying the Installation

Perform the appropriate processes for your distribution to ensure that your installation of caAdapter was successful.

Verifying the Binary Installation

Perform the following steps to launch the caAdapter mapping tool:

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

Verifying the Source Installation

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

Step	Action
1.	In a Command Prompt window, enter cd {home_directory} to go to your home directory (for example, in Windows C:\caadapter).
2.	Enter **`ant`**
3.	Change to dist directory, enter **`cd dist`**
4.	Enter **run.bat** The caAdapter Mapping Tool 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.
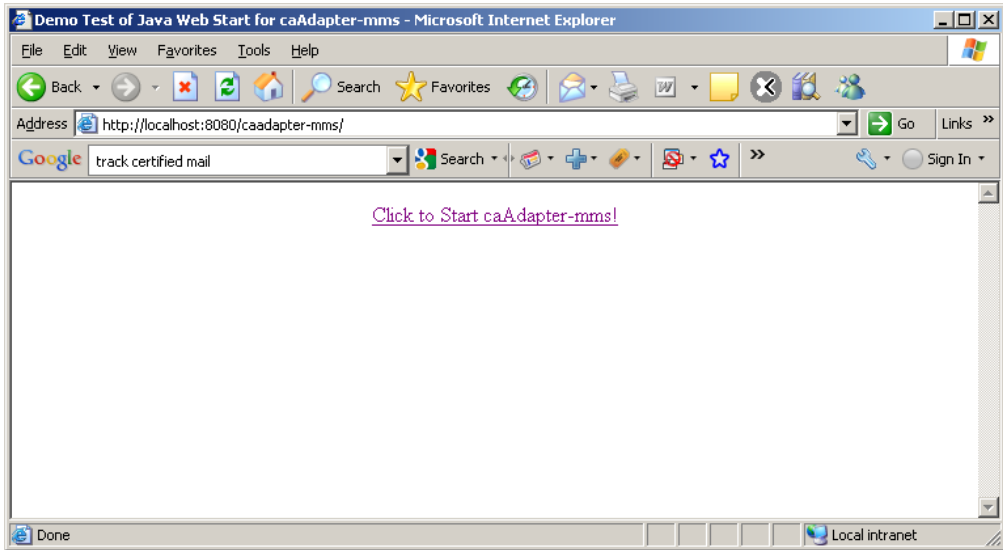
Web server requires the Java Web Start WAR file digitally signed to assert that the code is trusted. Perform the following steps to digitally sign the WAR file using an existing digital certificate or a temporary one.

Generating the Digital Key
This step is required only if you need generate a temporary digital certificate. If you sign the WAR file with existing digital certificate, directly go to next step **Building Java Web Start War Deployment File**. The following steps direct you setup parameter and generate a digital certificate using Java Key Generator.

Step	Action

1.	The Java Key Generator requires the information of publisher to create a digital certificate and the information of a keystore to save the certificate. Modify `build.properties` in the caAdapter home directory to set values of the parameters. The resulting `build.properties` should be as follows:
	
	`#The following properties are parameters of 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 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 key store is created in file named as "myKeyStore". This key store is programmatically accessible with alias as "myKeyAlias" and pass phrase as "myKeyPass".

Building Java Web Start Deployment WAR File

Step	Action

1.	If you use a temporary digital certificate generate in above step to sign the Java Web Start application, go to next step directly.
	
	If you use an existing digital certificate to sign the Java Web Start application, modify the `build.properties` file with correct key store 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`

2.	Run the following command in the caAdapter home directory providing the `webserver` to host the Java Web Start deployment. `ant build-all –Dwebserver=http://localhost:8080` If the command executes successfully, caadapter-mms.war file is created in *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 the caAdapter Mapping Tool.

Step	Action
1.	Navigate to the **caAdapter MMS 4.1.1** shortcut from the **Start** menu and click **caAdapter MMS 4.1.1**. The caAdapter Mapping Tool appears.
2.	**Congratulations!** If you can see the caAdapter Mapping Tool interface, your installation was successful. See the *caAdapter 4.1.1 User's Guide* for detailed information on using caAdapter MMS.

Contacting NCI CBIIT Application Support

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

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