***Installation Guide***

**caAdapter**

**Version 4.1**

**Title of Publication**



**TABLE OF CONTENTS**

Center for Biomedical Informatics & Information Technology

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[Introduction 1](#_Toc182209656)

[Overview of caAdapter 1](#_Toc182209657)

[caAdapter 4.1 Tested Platforms 1](#_Toc182209658)

[caAdapter Software Requirements 2](#_Toc182209659)

[Required Software—not included in caAdapter 2](#_Toc182209660)

[Required Software for Source Distribution—Not Included in caAdapter 3](#_Toc182209661)

[Upgrading to caAdapter 4.1 from Previous HL7 SDK Versions 4](#_Toc182209662)

[Downloading caAdapter 4](#_Toc182209663)

[Installing caAdapter 5](#_Toc182209664)

[Installing the Source and Binary Distributions 5](#_Toc182209665)

[Installing the Windows Distribution 5](#_Toc182209666)

[Verifying Installation 6](#_Toc182209667)

[Verifying Binary Installation 6](#_Toc182209668)

[Verifying Source Installation 6](#_Toc182209669)

[Verifying Windows Installation 8](#_Toc182209670)

[Verifying Application Resources 8](#_Toc182209671)

[HL7 Resources Files 8](#_Toc182209672)

[Contacting Technical Support 10](#_Toc182209673)

[NCI CBIIT Application Support 10](#_Toc182209674)

## Introduction

This installation guide outlines the supported configurations and technical installation instructions for caAdapter 4.1. Directions for validating the caAdapter installation are also included.

|  |  |
| --- | --- |
| Overview of caAdapter | The caAdapter consists of a technical architecture and a tool (<http://ncicb.nci.nih.gov/NCICB/infrastructure/cacore_overview/caadapter>) to support data sharing via the HL7 version 3 (v3) messaging standard at the National Cancer Institute Center for Biomedical Informatics & Information Technology (NCI CBIIT) (<http://ncicb.nci.nih.gov>) or any cancer center as part of the cancer Biomedical Informatics Grid (caBIG) ([http://caBIG.nci.nih.gov](http://cabig.nci.nih.gov/)) solution.  The caAdapter facilitates HL7 v3 message building, parsing and validation. It offers an open source platform for enabling healthcare applications to build and parse HL7 v3 messages based on specific message definitions. The caAdapter provides the capability to perform vocabulary validation and integrates with NCI CBIIT cancer Common Ontologic Representation Environment (caCORE) components (<http://ncicb.nci.nih.gov/NCICB/infrastructure>). This supports NCI CBIIT’s mission of developing a translational research infrastructure and building a clinical research network by providing a common platform for sharing data.  The caAdapter Mapping Tool provides users a graphical user interface (GUI) and a runtime engine to map and convert clinical data in various incoming formats to an equivalent target HL7 v3 XML. For more information about the caAdapter, see the *caAdapter 4.1 User's Guide*. |

## caAdapter 4.1 Tested Platforms

contains the system platforms and their requirements that caAdapter 4.1 has been tested on at NCI CBIIT.

|  | 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 caAdapter Tested Platforms

## caAdapter Software Requirements

|  |  |
| --- | --- |
| Required Software—not included in caAdapter | You must download and install Java that is not included with caAdapter. contains detailed information on the software and URL hyperlinks (for download). The version is in accordance with the NCI CBIIT technology stack. You are required to visit each site of the third party software to review the license agreement prior to using the software with caAdapter. |

| 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 | 5.12.1.0 | 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 |
| SQLeonardo | [sqleonardo.2007.01](http://downloads.sourceforge.net/sqleonardo/sqleonardo.2007.01_01.zip?modtime=1168374442&big_mirror=0) | 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 2 Required software for all caAdapter distributions

Verify the JAVA\_HOME environment variable is set and add it to your PATH. Perform the following steps to do this 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 **JAVA\_HOME**, 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—Not Included in caAdapter | If you are installing source code, you must download and install Ant that is not included with caAdapter. 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 |

Table3 Required software for caAdapter source distribution

Verify the ANT\_HOME environment variable is set and add it to your PATH. Perform the following steps to do this 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 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. |

## Upgrading to caAdapter 4.1 from Previous HL7 SDK Versions

|  |  |
| --- | --- |
| HL7 SDK Users Upgrading to caAdapter 4.1 | All users of previous HL7 SDK versions are encouraged to upgrade to the caAdapter 4.1. This release fixes some important bugs.  It is recommended to uninstall any previous versions of HL7 SDK before following the procedures to install caAdapter 4.1 |

## 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 | Provide your email, name, and institution. Click **Enter the Download Area**. |
| 3 | Select **Download** from the **caAdapter** section**.**  Check the box labeled **Checking this box indicates that you agree to the above terms** to indicate agreement to 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). The caAdapter software requires HL7 standards and message specification to perform any HL7 transformation functionality. They are not included with any distribution. Users are required to obtain these files directly from HL7 group at :  <http://www.hl7.org>   * + **Binary Distribution:**The caAdapter binary distribution file contains the binary code, Javadocs, Release Notes, example messages, and licenses.  |  |  | | --- | --- | | Binary Zip File Name | Description | | Caadapterv4\_1\_BETA\_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 | | Caadapterv4\_1\_BETA\_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 | | Caadapterv4\_1\_BETA\_.msi | Windows 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.) contains the directory structure after installation. |

|  |  |
| --- | --- |
| Installing the Windows Distribution | Double-click on the .msi file and follow the instructions provided to complete installation. 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 |
| schemas | HL7 v3 Schema files |
| src | Source code (.java files) (only for source distribution) |
| workingspace | Default directory where you can save project files. It contains log files and HL7 v3 XML instances. It also contains an examples directory with sample data. |

Table 3 Directory Structure of caAdapter

## 

## Verifying Installation

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

##### Verifying Binary Installation

Perform the following steps to launch the caAdapter Mapping Tool GUI:

|  |  |
| --- | --- |
| 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*** |
| 3 | The caAdapter Mapping Tool GUI displays. |

##### Verifying Source Installation

Perform the following steps to launch the caAdapter Mapping Tool GUI:

|  |  |
| --- | --- |
| 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*** |
| 5 | The caAdapter Mapping Tool GUI displays. |

##### Verifying Windows Installation

Perform the following steps to launch the caAdapter Mapping Tool GUI:

|  |  |
| --- | --- |
| Step | Action |
| 1 | Navigate to the **caAdapter** shortcut from the **Start** menu and click **caAdapter**. |
| 2 | The caAdapter Mapping Tool GUI displays. |

**Congratulations!** If you can view the caAdapter Mapping Tool GUI, your installation was successful. See the *caAdapter 4.1 User's Guide* for detailed information on using caAdapter.

## Verifying Application Resources

After install caAdapter application, go to conf folder and edit caadapter-component.properties file to enable the interested modules

caadapter.hl7.transformation.activated=true

caadapter.hl7.csv.transformation.activated=true

caadapter.hl7.v2v3.conversion.activated=true

caadapter.model.mapping.activated=true

caadapter.sdtm.transformation.activated=

caadapter.web.service.activated=

caadapter.help.menu.activated=true

caadapter.querybuilder.menu.activated=true

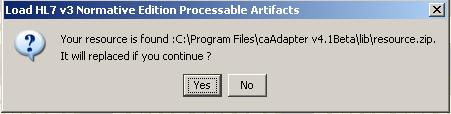
## HL7 Resources Files

caAdapter requires the following two zip files to run HL7-related functions. The table below provides simple steps to generating, or obtaining those files.

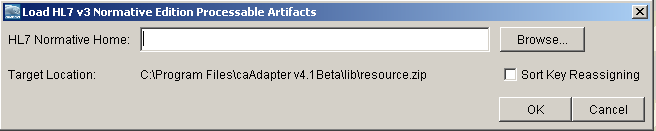
|  |  |  |  |
| --- | --- | --- | --- |
| Resource File Name | Source | Source URL | Comments |
| resource.zip | HL7 Organization | www.hl7.org | caAdapter can generate this file from the HL7 V3 Normative Edition 2006 CD available from the HL7 Organization. Please reference the paragraph below for step-by-step instructions. |
| resourceV2.zip – This file was manually constructed | HL7 Organization | www.hl7.org | For details on obtaining this file, please contact the caAdapter support team at:  NCICB Application Support  http://ncicb.nci.nih.gov/NCICB/support  Telephone: 301-451-4384  Toll free: 888-478-4423 |

**Generating the resources.zip File**

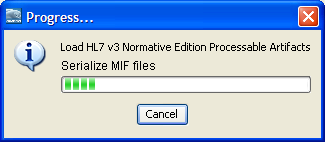
1. Select Tools > Load HL7 v3 Normative Edition Processable Artifacts.
2. The following screen will be displayed, select [Yes]. Note that the system will display this screen only if you already ran this process before at least once.



1. Locate the HL7 Normative Edition home directory and click OK.



caAdapter will begin processing the information to create the resource.zip file, and displays a confirmation message upon completion.



## Contacting Technical Support

|  |  |
| --- | --- |
| NCI CBIIT Application Support | <http://ncicbsupport.nci.nih.gov/sw/>  Telephone: 301-451-4384  Toll free: 888-478-4423 |