

CAINTEGRATOR V.1.3

Local Installation Guide



Center for Biomedical Informatics
and Information Technology

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Introduction

This *calIntegrator v.1.3 Installation Guide* provides you with the instructions to install and configure a fresh calIntegrator v.1.3 application. The calIntegrator installation installs and configures a JBoss application server and creates a calIntegrator-specific schema within a pre-existing database on a preinstalled MySQL server.


Directions are given in this document for both Linux and Windows operating systems.

NOTE 	Published calIntegrator v.1.3 development documentation can be found on the calIntegrator page of the NCI wiki: https://wiki.nci.nih.gov/x/9YMOAQ
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Overview of calIntegrator Installation

The process for installing calIntegrator v.1.3 includes the following tasks described in this document:

1. Downloading and installing required software
 2. Setting environment variables
 3. Downloading calIntegrator v.1.3 distribution files
 4. Installing
 - a. GUI Installer Method
 - b. Command-Line Method
 - Editing `install.properties` file
 5. Configuring JBoss servers and MySQLserver to run as a service
 6. Post-Installation Tasks
 - a. Using UPT to Add calIntegrator Users
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NOTE 	For the system userid which will be used to start the calIntegrator application, you should specify permission to open at least 2048 file descriptors.
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calIntegrator v.1.3 Software and Technology Requirements

Tested Environment

The calIntegrator v.1.3 installation has been tested on Linux Red Hat Enterprise Linux AS 4 64/32-bit (for AMD chipset) and the Windows XP/2003 environments. While the installation may work in other Linux and Windows environments, it has only been tested in these environments.

NOTE



For the system userid which will be used to start the calIntegrator application, you should specify permission to open at least 2048 file descriptors.

Required Software—Not Included in calIntegrator

Many of the servers and services that make up calIntegrator are automatically installed as part of this installation. However, certain tools that you must manually install and configure are listed in Table 1. The software name, version, description, and URL hyperlinks (for download) are indicated in the table.

Prior to the calIntegrator v.1.3 installation, you must download and install the following tools and recommended versions in the order they are listed in Table 1. Complete the directions for installing each, as directed on the corresponding website.

Required Software Name Version	Description
Java 2 Platform Standard Edition 5.0 Update 10 (J2SE 5.0) http://java.sun.com/products/archive/j2se/5.0_10/ Be sure to download the correct Java SDK for your operating environment. For example, for Linux AMD 64, you would download <code>jdk-1_5_0_10-linux-amd64-rpm.bin</code> . For Windows, you might download <code>jdk-1_5_0_10-windows-i586-p.exe</code> .	The J2SE Development Kit (JDK) supports creating J2SE applications.
Apache Ant, 1.7.0 https://gforge.nci.nih.gov/svnroot/lsc/trunk/tools/apache-ant-1.7.0-bin.zip	Apache Ant is a Java-based build tool.
MySQL, 5.0.45 http://downloads.mysql.com/archives.php?p=mysql-5.0&v=5.0.27	MySQL is an open-source database software application.

Table 1 Required Software

IMPORTANT

As you install each application, record the installation directory path, and the hostname of your MySQL DB server, and the DB admin username/password, if you are going to install UPT.

Java SDK Installation

When you install the Java SDK, you will be prompted to select the installation directory. Record the path, as this directory will be used when you set the environment variables.

Apache Ant Installation

- Unzip the Apache Ant distribution files using a command line unzip tool or a zip utility, such as WinZip.
- After extracting the zip, you must set the environment variables, described in the following section, so that Ant is available in the system PATH.

Apache Ant Environment Variables

NOTE

The purpose of setting operating system environment variables is so that the Java SDK and Ant build tool are available to run from anywhere in the system.

Linux

To set the environmental variables in Linux, follow these steps:

NOTE

The JAVA_HOME, ANT_HOME and PATH environment variables are set in `/etc/profile`. You may need to create the variables, or modify them if they already exist.

Step	Action
1	<p>As the root user, enter the following in the <code>/etc/profile</code> file. A <code>PATH</code> variable should already be created in this file, so be sure to define the <code>JAVA_HOME</code> and <code>ANT_HOME</code> export before the <code>PATH</code> export. Replace <code><some_path></code> with the correct path fragment for Java and Ant installations.</p> <pre>export JAVA_HOME=<some_path>/jdk1.5.0_10 export ANT_HOME=<some_path>/apache-ant-1.7.0 export PATH=\$JAVA_HOME/bin:\$ANT_HOME/bin:\$PATH</pre>
2	Log out and log back in so that the system recognizes your changes.


Verifying the Environment Variables in Linux

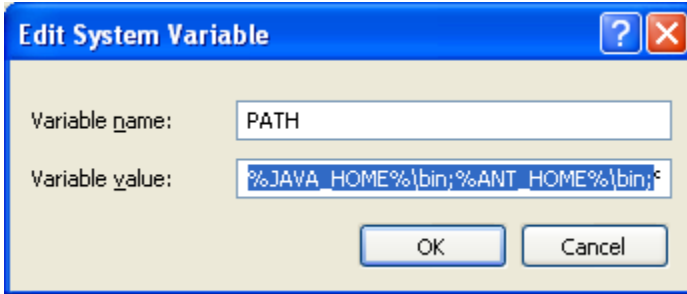
To verify that environment variables have been set correctly, follow these steps:

Step	Action
1	<p>From the command line, enter:</p> <pre>echo \$JAVA_HOME echo \$ANT_HOME</pre> <p>Both of these commands should return the location where you installed these tools.</p>
2	To verify your Java SDK installation, enter <code>java -version</code> from a command prompt. You should see <code>java version "1.5.0_10"</code> .
3	To verify your Ant installation, enter: <code>ant -version</code> from a command prompt. You should see: <code>Apache Ant version 1.7.0 compiled on December 13 2006</code> .

Windows

To set the environmental variables in Windows, follow these steps:

<p>NOTE</p> 	The <code>JAVA_HOME</code> , <code>ANT_HOME</code> and <code>PATH</code> environment variables are set in the Systems Properties.
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Step	Action
1	In Windows, select Control Panel , then select the Systems application. In the Systems window, select the Advanced tab.
2	On the Advanced tab, click the Environment Variables button. To add a new system variable, select the New button. a. In the Variable name text box, enter <code>JAVA_HOME</code> . b. In the Variable value text box, enter the location of your Java installation.
3	Click the New button again. a. In the Variable name text box, enter <code>ANT_HOME</code> . b. In the Variable value text box, enter the location of your Ant installation.
4	Select the PATH system environment variable, and select the Edit button. This opens the Edit System Variable dialog box, displayed here as an example. 
5	In the Variable value text box, prepend the following text in front of the text that already exists in the Variable Value field. <code>%JAVA_HOME%\bin;%ANT_HOME%\bin;</code> Click OK .

Verifying the Environment Variables in Windows

To verify the environment variables have been set correctly, follow these steps:

Step	Action
1	From the command line, enter: <code>echo %JAVA_HOME%</code> <code>echo %ANT_HOME%</code> Both of these commands should return the location where you installed these tools.

Step	Action
2	To verify your Java SDK installation, enter java -version from a command prompt. You should see <code>java version "1.5.0_10"</code> .
3	To verify your Ant installation, enter ant -version from a command prompt. You should see: <code>Apache Ant version 1.7.0 compiled on December 13 2006</code> .


 NOTE	Environment variables for calIntegrator and, optionally, UPT are modified and set in those sections of this document: Installing a New calIntegrator v.1.0 on page 10 and Downloading and Installing UPT (Optional) on page 8.
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MySQL Installation and Configuration

A MySQL 5.0.45 server must be downloaded, installed and running in order for the calIntegrator installation to work successfully.

To download and install MySQL, follow these steps:

Step	Action
1	First, follow the steps outlined on the MySQL website: http://downloads.mysql.com/archives.php?p=mysql-5.0&v=5.0.45 .
2	On the host which runs the mysql database, modify the mysql configuration as follows. Find the file "my.cnf" (on linux the file is located at <code>/etc/my.cnf</code>) and edit the file by adding the following: <pre>innodb_buffer_pool_size=128M net_write_timeout = 3600 lower_case_table_names=1</pre>
3	Restart mysql.

<p>TIP</p> 	<p>You should consult the following three links to successfully set up secure and well-performing MySQL servers, in preparation for installing caIntegrator:</p> <ul style="list-style-type: none"> • MySQL Security Guide - http://dev.mysql.com/doc/refman/5.0/en/security-guidelines.html • Performance – <ul style="list-style-type: none"> ◦ General performance tuning - http://dev.mysql.com/books/hpmysql-excerpts/ch06.html ◦ InnoDB engine performance tuning - http://dev.mysql.com/doc/refman/5.0/en/innodb-tuning.html
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<p>MORE TIPS</p> 	<ul style="list-style-type: none"> • Record the MySQL root username/password chosen during the MySQL installation process, as you will need to use this as your <code>database.system.user/ database.system.password</code> later in the UPT installation process, should you choose to install UPT. • Note the MySQL port chosen during the MySQL installation process, as you will need to use this as your <code>database.port</code> later in both the caIntegrator and UPT (if installing UPT) installation processes.
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Working with Properties Files


About Properties

An important component of command-line installation of either caIntegrator or UPT is configuring properties files. Prior to initiating a command-line installation, property variables must be modified. Note the following points about changing or entering variables.


Paths in Properties Files

<p>NOTE</p> 	<p>The paths in the <code>.properties</code> files should use <i>forward</i> slashes. For example, you would use <code>application.base.path=C:/apps/caIntegrator-app</code>, not <code>application.base.path=C:\apps\caIntegrator-app</code>. If you use backslashes, you will experience undesirable results.</p>
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Spaces in Path Property Values

<p>NOTE</p> 	<p>You should not specify paths with spaces included as property values. In Windows, note that the <code>C:\Documents and Settings\<username></code> path contains spaces and should not be used, or anything similar. If you are using Windows, use a path such as <code>C:/apps/calIntegrator</code>. Spaces are fine for property values which do not represent a path.</p>
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More About Property Values

<p>NOTES</p> 	<ul style="list-style-type: none"> • In each <code>*.properties</code> file, any property value marked with <u>uppercase</u> <code>REPLACE_*</code> must be manually updated with the appropriate value. • In each <code>*.properties</code> file, any property value marked with <u>lowercase</u> <code>replace_*</code> may be optionally updated with the appropriate value. • If there is reference to a <code>database.system.user</code> for your MySQL server, you can determine which users have full privileges to create and manage other databases, by executing <i>show grants</i> from a MySQL prompt to determine the correct level of privileges.
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Downloading and Installing UPT (Optional)

If you do not already have a User Provisioning Tool (UPT) installed, and you wish to manage user accounts for your calIntegrator application, you **must** install UPT.

Overview of UPT


UPT is used to provision users in the calIntegrator application. Each CBIIT application installs with its own Common Security Module (CSM) schema that has sample/default users and a role/permissions structure. To add additional users you must provision the calIntegrator application in the UPT. Then you can assign users to calIntegrator.

You can download UPT 4.2 through the following link:

https://gforge.nci.nih.gov/frs/download.php/7298/CSM_UPT_42_Release.zip

For instructions on how to install UPT 4.2, refer to the chapter, UPT Installation and Deployment, in the following document:


https://gforge.nci.nih.gov/docman/view.php/12/18945/caCORE_CSM_v42_ProgrammersGuide.pdf

NOTE 	UPT 4.2 is backwards compatible to previous versions of CSM. When you provision the application in UPT 4.2, you will be asked to specify the CSM version calIntegrator is using. You should enter version 4.2 .
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Installing calIntegrator v.1.3 Application and Services

To newly install the calIntegrator v.1.3 application and services, follow the steps in this section:

- [Downloading calIntegrator v.1.3 Files](#) on page 10
 - [Installing a New calIntegrator v.1.3](#) on page 10
 - [GUI Installer Method of Installation](#) on page 10
 - [Command-Line Method of Installation](#) on page 17
 - [Configuring JBoss](#) on page 23
 - [Configuring JBoss Servers and MySQL Server to Run as Services](#) on page 24
 - [Post-Installation Tasks](#) on page 26
 - [Using UPT to Administer calIntegrator Users](#) on page 26
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BEFORE YOU BEGIN 	<ul style="list-style-type: none">• Important: There must already be a pre-existing MySQL DB and connection username/password for calIntegrator to install into; calIntegrator does not create its own DB.
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Downloading calIntegrator v.1.3 Files

To download the calIntegrator v.1.3 files, follow this step:

Step	Action
1	<p>The various installation files for calIntegrator v.1.3 are between 100-200MB in size. All of the files can be downloaded from the calIntegrator distribution folder here: https://gforge.nci.nih.gov/frs/?group_id=507.</p> <ul style="list-style-type: none"> • For a new command-line installer, download the <code>caIntegrator2_install_1_3.zip</code> file (around 167MB). • For a command-line upgrade installer, download the <code>caIntegrator2_upgrade_1_3.zip</code> file (about 167 MB). • For a GUI installer that you can use to do a fresh calIntegrator installation, download the <code>caIntegrator2_gui_distribution_1_3.jar</code> file (about 194 MB). <p>Remember the download location, as you will be using this file to run the installation in the steps that follow.</p>

Server Components in calIntegrator v.1.3

These server components are installed and configured as part of the calIntegrator v.1.3 installation. You do not need to do anything further to download or install these components.

- JBoss 4.0.5 (hosts the calIntegrator application)

Installing a New calIntegrator v.1.3

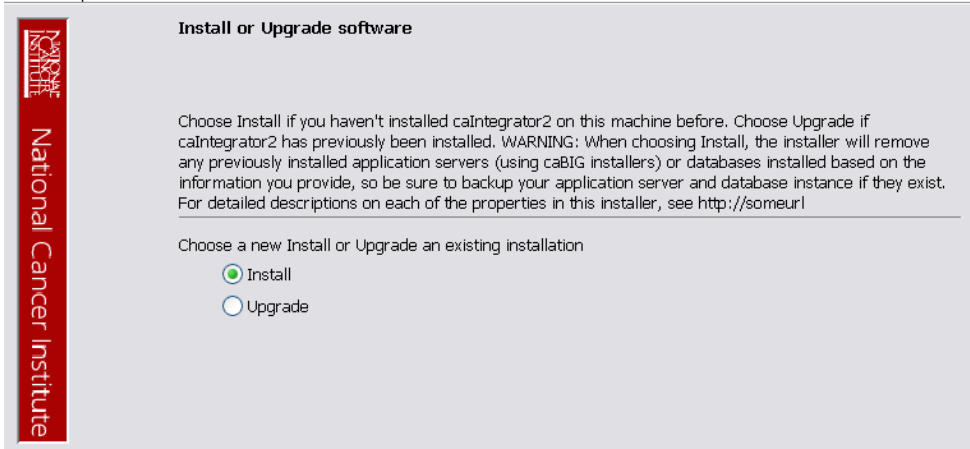
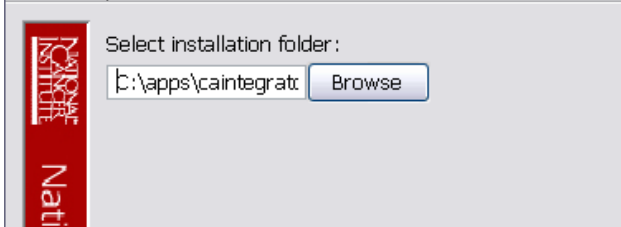
You can perform a new installation of calIntegrator v.1.3 using either of these two methods:


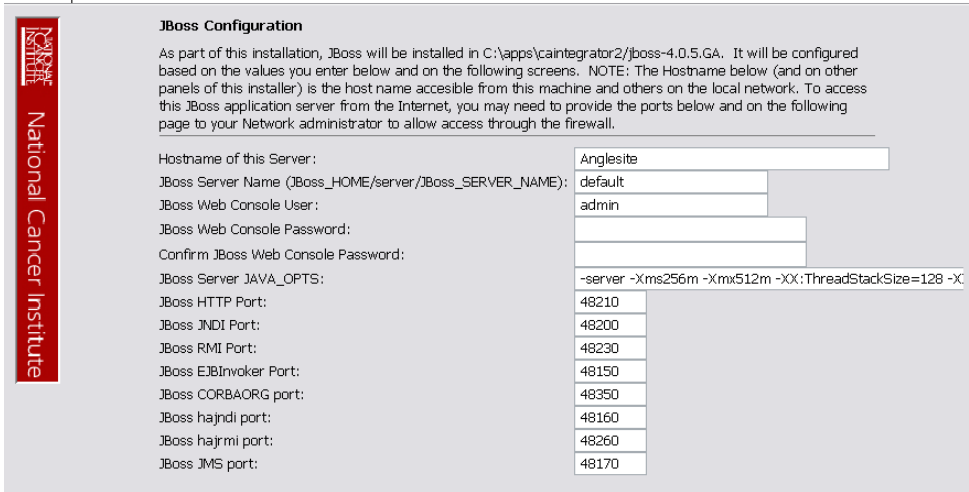
- A GUI Installation wizard. Instructions for this method start in the following section.
- A command-line installation. For instructions, see page 17.

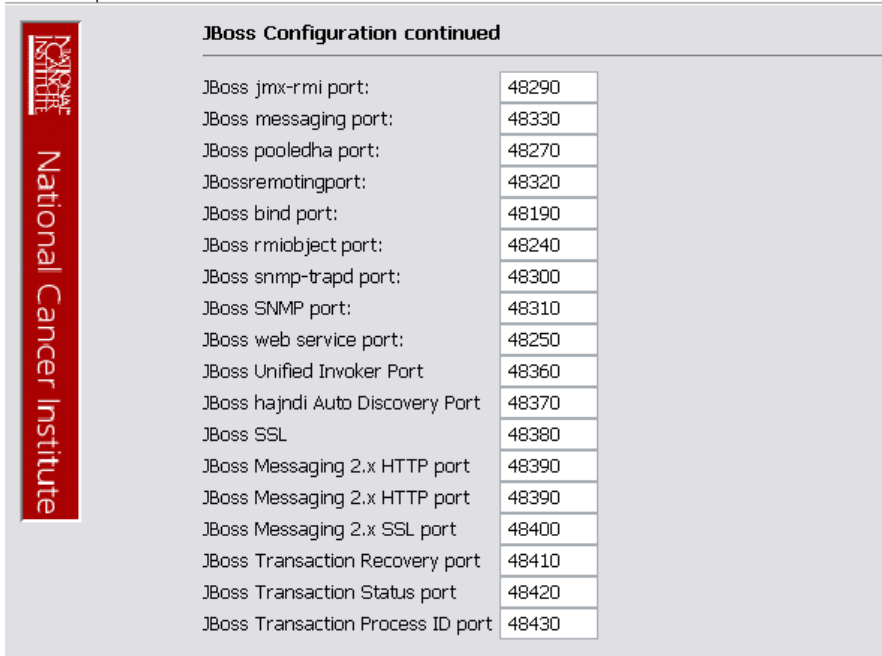
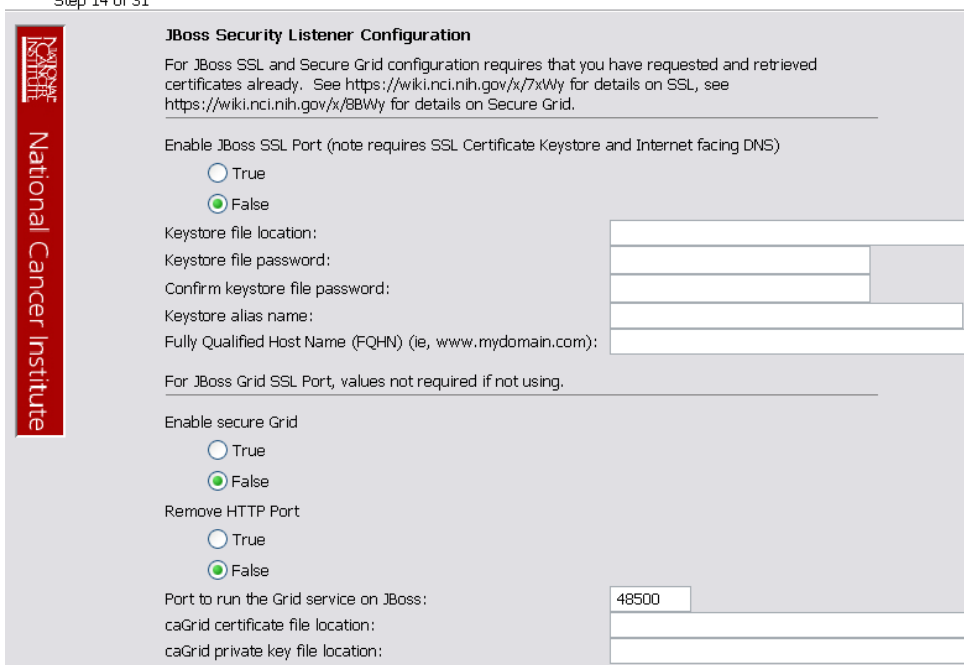
GUI Installer Method of Installation

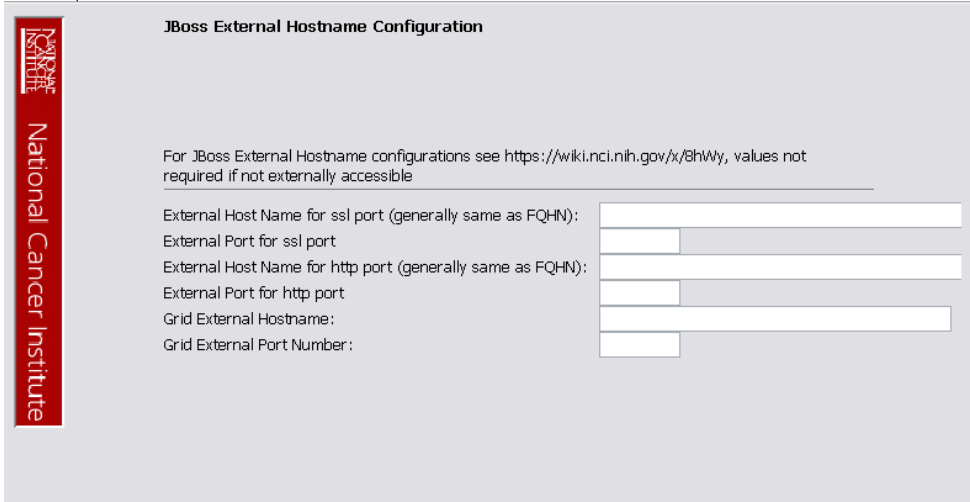
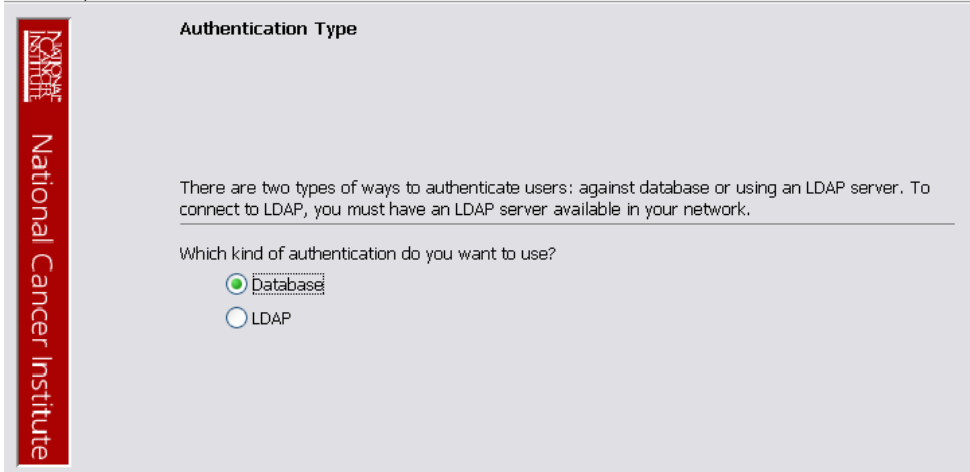
For detailed information on all of the GUI installer fields, refer to the documentation at this location: <https://wiki.nci.nih.gov/x/NAUuAQ>.

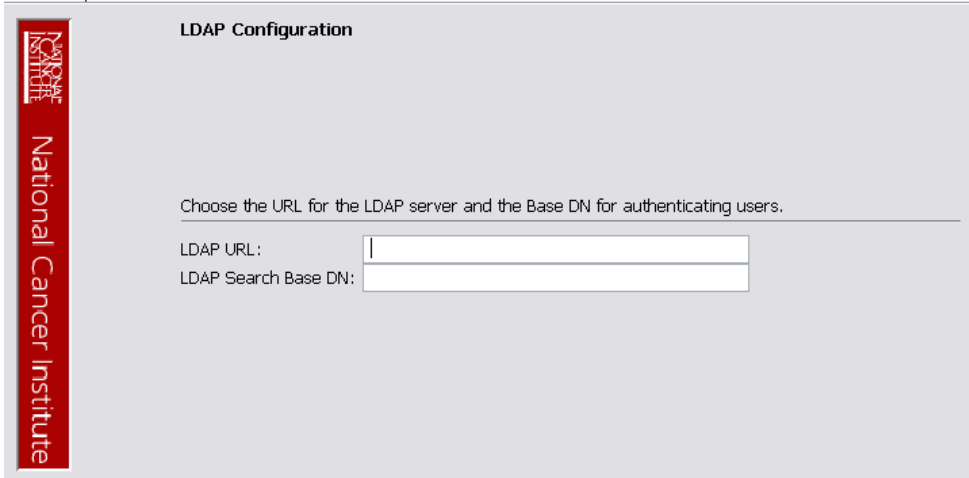
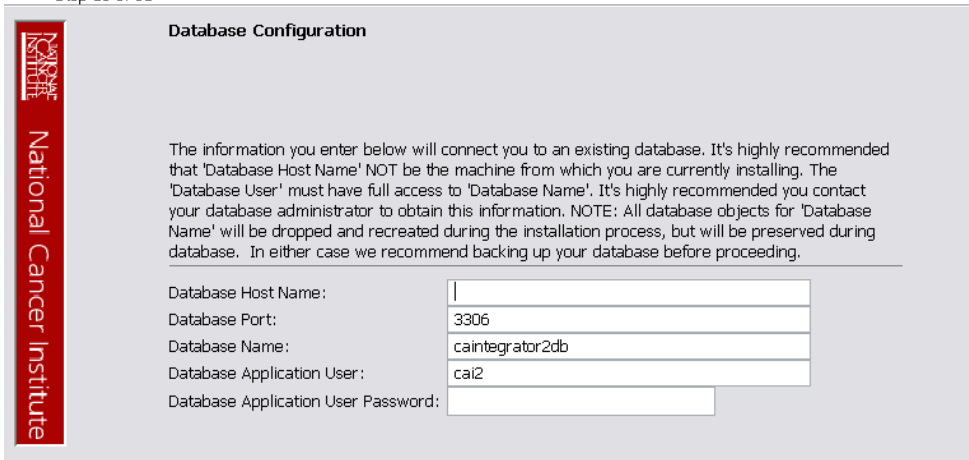
For performing an installation using the GUI Installer, follow these steps:

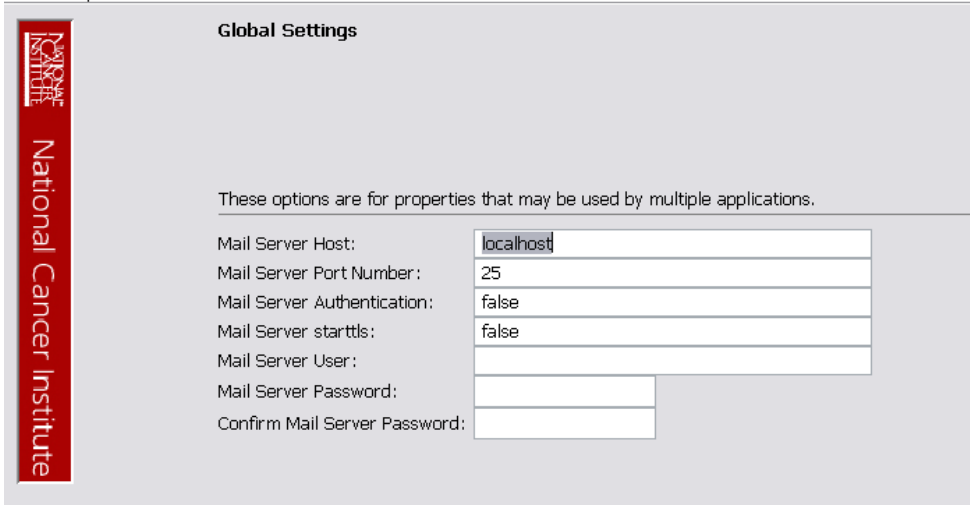
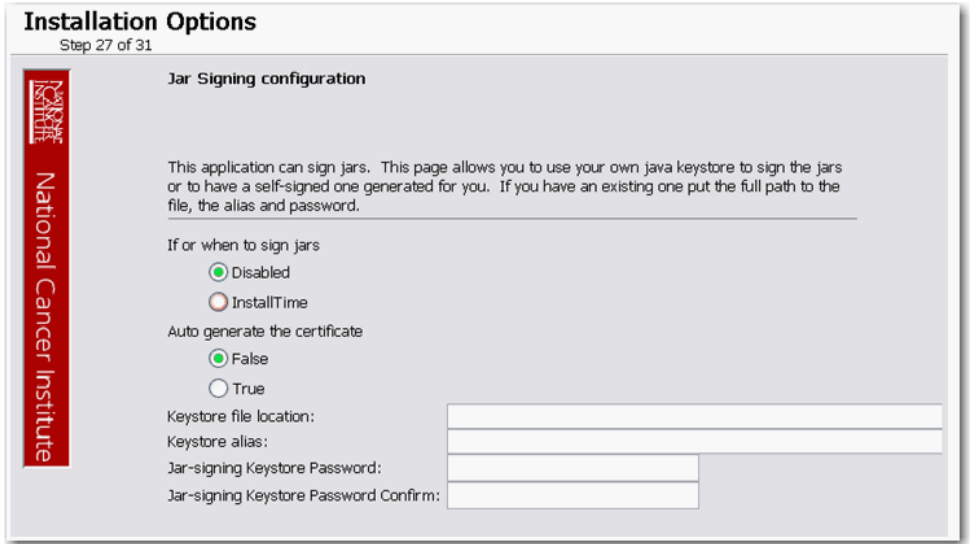
Step	Action
1	Open a command prompt in the directory where you downloaded the caIntegrator2_gui_distribution_1_3.jar. Enter this command to Invoke the GUI installer: <code>java -jar caIntegrator2_gui_distribution_1_3.jar.</code>
2	The Installation Wizard opens to facilitate the installation process. Click Next to proceed through the pages of the wizard, beginning with progressing past the Welcome page.
3	Review the release notes.
4	You must accept the license agreement.
5	<p>Select Install installation type. For a new installation, select Install.</p> <p>Installation Options Step 4 of 31</p> 
6	<p>Navigate to the directory where you would like to install caIntegrator.</p> <p>Installation Folder Step 5 of 31</p>  <p>If the folder does not yet exist, click OK in the dialog box to indicate that you want the folder to be created.</p>

Step	Action																												
7	<p>Select the type of installation you would like to do, you can install everything, or just specific components (JBoss or Database only). The remaining sections in this guide will assume you chose to install everything.</p> <p>Installation Options Step 6 of 31</p>  <p>Choose what to install</p> <p>Select whether you want to install or upgrade all components of this application, or just an individual component. If you want to install components on different servers, select the one component on this machine and other components on other machines.</p> <p>Choose what to install</p> <ul style="list-style-type: none"> <input checked="" type="radio"/> Everything <input type="radio"/> JBoss <input type="radio"/> Database - (must be run on JBoss machine) 																												
8	<p>Continue walking through the pages of the installer. Configure the calIntegrator JBoss server on the next two pages of the installation wizard. The screen shots show example values. The port values which are specified are the defaults and can be used unless you want to reconfigure the values because of values already in use.</p> <p>Installation Options Step 12 of 31</p>  <p>JBoss Configuration</p> <p>As part of this installation, JBoss will be installed in C:\apps\calintegrator2\jboss-4.0.5.GA. It will be configured based on the values you enter below and on the following screens. NOTE: The Hostname below (and on other panels of this installer) is the host name accessible from this machine and others on the local network. To access this JBoss application server from the Internet, you may need to provide the ports below and on the following page to your Network administrator to allow access through the firewall.</p> <table border="0"> <tr> <td>Hostname of this Server:</td><td>Anglesite</td></tr> <tr> <td>JBoss Server Name (JBoss_HOME/server/JBoss_SERVER_NAME):</td><td>default</td></tr> <tr> <td>JBoss Web Console User:</td><td>admin</td></tr> <tr> <td>JBoss Web Console Password:</td><td></td></tr> <tr> <td>Confirm JBoss Web Console Password:</td><td></td></tr> <tr> <td>JBoss Server JAVA_OPTS:</td><td>-server -Xms256m -Xmx512m -XX:ThreadStackSize=128 -X</td></tr> <tr> <td>JBoss HTTP Port:</td><td>48210</td></tr> <tr> <td>JBoss JNDI Port:</td><td>48200</td></tr> <tr> <td>JBoss RMI Port:</td><td>48230</td></tr> <tr> <td>JBoss EJBInvoker Port:</td><td>48150</td></tr> <tr> <td>JBoss CORBAORG port:</td><td>48350</td></tr> <tr> <td>JBoss hajndi port:</td><td>48160</td></tr> <tr> <td>JBoss hajrmi port:</td><td>48260</td></tr> <tr> <td>JBoss JMS port:</td><td>48170</td></tr> </table>	Hostname of this Server:	Anglesite	JBoss Server Name (JBoss_HOME/server/JBoss_SERVER_NAME):	default	JBoss Web Console User:	admin	JBoss Web Console Password:		Confirm JBoss Web Console Password:		JBoss Server JAVA_OPTS:	-server -Xms256m -Xmx512m -XX:ThreadStackSize=128 -X	JBoss HTTP Port:	48210	JBoss JNDI Port:	48200	JBoss RMI Port:	48230	JBoss EJBInvoker Port:	48150	JBoss CORBAORG port:	48350	JBoss hajndi port:	48160	JBoss hajrmi port:	48260	JBoss JMS port:	48170
Hostname of this Server:	Anglesite																												
JBoss Server Name (JBoss_HOME/server/JBoss_SERVER_NAME):	default																												
JBoss Web Console User:	admin																												
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Confirm JBoss Web Console Password:																													
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Step	Action																																						
9	<p>Installation Options Step 13 of 31</p>  <p>The screenshot shows the 'JBoss Configuration continued' window. On the left is a vertical red banner with the National Cancer Institute logo and name. The main area contains a list of JBoss ports and their default values:</p> <table border="1"> <thead> <tr> <th>Port Name</th> <th>Value</th> </tr> </thead> <tbody> <tr><td>JBoss jmx-rmi port:</td><td>48290</td></tr> <tr><td>JBoss messaging port:</td><td>48330</td></tr> <tr><td>JBoss pooledha port:</td><td>48270</td></tr> <tr><td>JBossremotingport:</td><td>48320</td></tr> <tr><td>JBoss bind port:</td><td>48190</td></tr> <tr><td>JBoss rmiobject port:</td><td>48240</td></tr> <tr><td>JBoss snmp-trapd port:</td><td>48300</td></tr> <tr><td>JBoss SNMP port:</td><td>48310</td></tr> <tr><td>JBoss web service port:</td><td>48250</td></tr> <tr><td>JBoss Unified Invoker Port</td><td>48360</td></tr> <tr><td>JBoss hajndi Auto Discovery Port</td><td>48370</td></tr> <tr><td>JBoss SSL</td><td>48380</td></tr> <tr><td>JBoss Messaging 2.x HTTP port</td><td>48390</td></tr> <tr><td>JBoss Messaging 2.x HTTP port</td><td>48390</td></tr> <tr><td>JBoss Messaging 2.x SSL port</td><td>48400</td></tr> <tr><td>JBoss Transaction Recovery port</td><td>48410</td></tr> <tr><td>JBoss Transaction Status port</td><td>48420</td></tr> <tr><td>JBoss Transaction Process ID port</td><td>48430</td></tr> </tbody> </table>	Port Name	Value	JBoss jmx-rmi port:	48290	JBoss messaging port:	48330	JBoss pooledha port:	48270	JBossremotingport:	48320	JBoss bind port:	48190	JBoss rmiobject port:	48240	JBoss snmp-trapd port:	48300	JBoss SNMP port:	48310	JBoss web service port:	48250	JBoss Unified Invoker Port	48360	JBoss hajndi Auto Discovery Port	48370	JBoss SSL	48380	JBoss Messaging 2.x HTTP port	48390	JBoss Messaging 2.x HTTP port	48390	JBoss Messaging 2.x SSL port	48400	JBoss Transaction Recovery port	48410	JBoss Transaction Status port	48420	JBoss Transaction Process ID port	48430
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JBoss Transaction Status port	48420																																						
JBoss Transaction Process ID port	48430																																						
10	<p>Installation Options Step 14 of 31</p>  <p>The screenshot shows the 'JBoss Security Listener Configuration' window. On the left is a vertical red banner with the National Cancer Institute logo and name. The main area contains the following configuration options:</p> <p>For JBoss SSL and Secure Grid configuration requires that you have requested and retrieved certificates already. See https://wiki.nci.nih.gov/x/7xWw for details on SSL, see https://wiki.nci.nih.gov/x/8BWw for details on Secure Grid.</p> <p>Enable JBoss SSL Port (note requires SSL Certificate Keystore and Internet facing DNS)</p> <p><input type="radio"/> True <input checked="" type="radio"/> False</p> <p>Keystore file location: <input type="text"/></p> <p>Keystore file password: <input type="password"/></p> <p>Confirm keystore file password: <input type="password"/></p> <p>Keystore alias name: <input type="text"/></p> <p>Fully Qualified Host Name (FQHN) (ie, www.mydomain.com): <input type="text"/></p> <p>For JBoss Grid SSL Port, values not required if not using.</p> <p>Enable secure Grid</p> <p><input type="radio"/> True <input checked="" type="radio"/> False</p> <p>Remove HTTP Port</p> <p><input type="radio"/> True <input checked="" type="radio"/> False</p> <p>Port to run the Grid service on JBoss: <input type="text" value="48500"/></p> <p>caGrid certificate file location: <input type="text"/></p> <p>caGrid private key file location: <input type="text"/></p>																																						

Step	Action
11	<p>If your JBoss is externally accessible then fill out this section, otherwise leave it blank and continue.</p> <p>Installation Options Step 15 of 31</p> 
12	<p>Specify the authentication type that calIntegrator should use. Database is the most likely choice if you aren't sure what to select here.</p> <p>Installation Options Step 16 of 31</p> 

Step	Action
13	<p>If you selected LDAP in the previous step, enter the appropriate configuration information for LDAP.</p> <hr/> <p>Installation Options Step 17 of 31</p> 
14	<p>If the authentication type is database: Specify the database connection information, including the name of the pre-existing database where the calIntegrator schema will be installed, and the pre-existing user which will be used by calIntegrator to connect to its database.</p> <p>Installation Options Step 18 of 31</p>  <p>Error messages inform you if the following occurs:</p> <ul style="list-style-type: none"> • If the specified database host cannot be reached, or the field is blank. • If the specified database does not already exist, or the calIntegrator DB user's credentials are wrong.

Step	Action
15	<p>Specify SMTP mail server connection information so that calIntegrator can send emails from users with new account requests.</p> <p>Installation Options Step 19 of 32</p> 
16	<p>Specify email addresses for the administrator to approve user requests.</p>
17	<p>If jar signing is necessary for the installation, then enable it on this page, however this step is optional and can be skipped.</p> <p>Installation Options Step 27 of 31</p> 
18	<p>Review the summary of the information you entered.</p>
19	<p>Review the selected install type and the installation destination. After you click Next from reviewing the installation destination, the installer runs. The installation wizard displays the installation progress and completion.</p>


Step	Action
20	When you are informed that the process is finished, click Done in the lower right corner of the wizard to close the installer.
21	To verify caIntegrator installation: <ul style="list-style-type: none"> • Open your web browser to <a href="http://<jboss.server.hostname>:<jboss.server.port>/caintegrator">http://<jboss.server.hostname>:<jboss.server.port>/caintegrator. • Enter ncimanager as the user and changeme as the password. Refer to the <user home>/./installer-caintegrator2/caintegrator2_installer/install.properties file for the correct values.
22	After successfully installing caIntegrator, make a backup of the <user home>/./installer-caintegrator2/caintegrator2_installer/install.properties file in a different directory for future reference.

<p>Important</p> <p>Multiple Installations</p> 	<p>If you have multiple installations of JBOSS on your host, you must ensure that the env variable for JBOSS_HOME is set to point to Jboss directory which is used by caIntegrator. If you need to change your JBOSS_HOME env variable, you must then restart caIntegrator. The method of doing this may depend on the start/stop/restart scripts you created after the installation. Most commonly, you can execute shutdown.bat on windows (or shutdown.sh on linux/mac) and then run.bat for windows (run.sh for linux/mac) under \$JBOSS_HOME/bin. Refer to the publicly available JBoss user's guide at www.jboss.org for more information.</p>
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Command-Line Method of Installation

<p>Overview of caIntegrator 2.0 Command-Line Installer Properties Files</p>	<p>When you do a command-line installation of caIntegrator for the first time, you will work with the properties file included in the caIntegrator2_distribution_1_3.zip. The file is: install.properties.</p> <p>If you are command-line upgrading from a previous version of caIntegrator, you will work with the upgrade.properties file included in the caIntegrator2_upgrade_1_3.zip.</p>
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calIntegrator Port Usage

<p>NOTE</p> 	<p>Verify that default port values defined in <code>install.properties</code> files are not in use on your system by running <code>netstat -a</code> from the command line. If the ports are in use prior to installation, you will likely experience problems with your installation.</p>
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JBoss Errors During Installation


<p>NOTE</p> 	<p>You may receive an error such as Exception in thread "main" <code>java.lang.NoClassDefFoundError: org/jboss/Shutdown</code>. This should not be a problem, as the installer attempts to stop previously installed servers to prevent problems during the installation. If this is your first time installing calIntegrator, you may receive and disregard this error message.</p>
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Command-line Installation Steps

To install a new instance of calIntegrator using the command-line, follow these steps:

Step	Action
1	<p>From the directory where you downloaded the <code>caIntegrator2_distribution_1_3.zip</code> from Downloading calIntegrator v.1.3 files on page 10, unzip the files, using one of these two methods:</p> <ol style="list-style-type: none"> Open a command prompt and use it to extract this file to a temporary location. For example, you may enter a command such as <code>unzip -q caIntegrator2_distribution_1_3.zip</code> (you must have a ZIP tool installed). This location will be referred to as the <code><installer_directory></code> henceforth. Use WinZip or a similar utility to unzip the files to a temporary location. This location will be referred to as the <code><installer_directory></code> henceforth. <p><i>Example:</i> <code><installer_directory> = C:\calIntegrator_20_installer</code></p>
2	<p>Note: Setting the property values is an important step in the install process. Before you complete steps 2 & 3, review Working with Properties Files on page 7. Open the <code><installer_directory>/install.properties</code> file, modify the values for your environment and save the file. For the latest details about configuring the properties for your environment, refer to this wiki page: https://wiki.nci.nih.gov/x/NAUuAQ.</p>
3	<p>Record the property values you have set.</p> <p>Note: You should not need to modify the other default values as we have chosen unique ports to reduce the risk of other applications using the same values. However, be sure to verify that the ports in this file are not being used by other applications.</p>

Step	Action
4	<p>From the command line, navigate to <installer_directory>/(<i>Example:cd C:\calIntegrator_2_0_installer</i>), and type ant. This initiates the installation process. The anticipated duration is anywhere from 1-15 minutes, depending on your system's speed, power and memory.</p> <p>The installer installs the calIntegrator schema in the specified pre-existing database on your MySQL server, and installs, configures, and starts the JBoss server for the calIntegrator application.</p>
5	<p>To verify calIntegrator installation, open your web browser to <a href="http://<jboss.server.hostname>:<jboss.server.port>/caintegrator">http://<jboss.server.hostname>:<jboss.server.port>/caintegrator.</p> <p>Refer to the <installer_directory>/install.properties file for the correct values. Enter manager as the user and manager as the password.</p>
6	<p>After successfully installing calIntegrator, make a backup of the <installer_directory>/install.properties file in a different directory for future reference.</p>


<p>Important</p> <p>Multiple Installations</p> 	<p>If you have multiple installations of JBOSS on your host, you must ensure that the env variable for JBOSS_HOME is set to point to Jboss directory which is used by calIntegrator. If you need to change your JBOSS_HOME env variable, you must then restart calIntegrator. The method of doing this may depend on the start/stop/restart scripts you created after the installation. Most commonly, you can execute shutdown.bat on windows (or shutdown.sh on linux/mac) and then run.bat for windows (run.sh for linux/mac) under \$JBOSS_HOME/bin. Refer to the publicly available JBoss user's guide at www.jboss.org for more information.</p>
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Upgrading calIntegrator 1.1.x to 1.3


This section describes how to upgrade your product from calIntegrator 1.1 to calIntegrator 1.3. The instructions in this section apply only if you have already installed a calIntegrator version 1.1

You can perform an upgrade installation of calIntegrator v.1.3 using either of these two methods:

- A GUI Installation wizard. Instructions for this method begin on page 20.
- A command-line installation. For instructions, see page 22.

<p>Before You Begin</p> 	<ul style="list-style-type: none"> • Important: Backup the 1.1 database. You need to create a reliable copy of your entire calIntegrator database. • Important: Backup the current installation of calIntegrator and artifacts from the original installation, such as properties files.
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If you are performing a new installation, go directly to the installation of version 1.3, [Installing calIntegrator v1.3 Application and Services](#), on page 9.

 <p>calIntegrator 1.1 Users Upgrading to calIntegrator 1.3</p>	<p>The directions in this section presume that you have a valid and functioning calIntegrator 1.1 That assumes that Java SDK, Apache Ant and MySQL have all been successfully uploaded and installed, as described on pages 2 in this document.</p>
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Overview of Properties Files

When you installed the previous version of calIntegrator 1.1, you configured the `install.properties` file. To complete the upgrade to calIntegrator 1.3, you must use some of the values from the original `install.properties` to configure values in the upgrade installer wizard GUI, or the `upgrade.properties` file if you are doing a command-line method of upgrade.

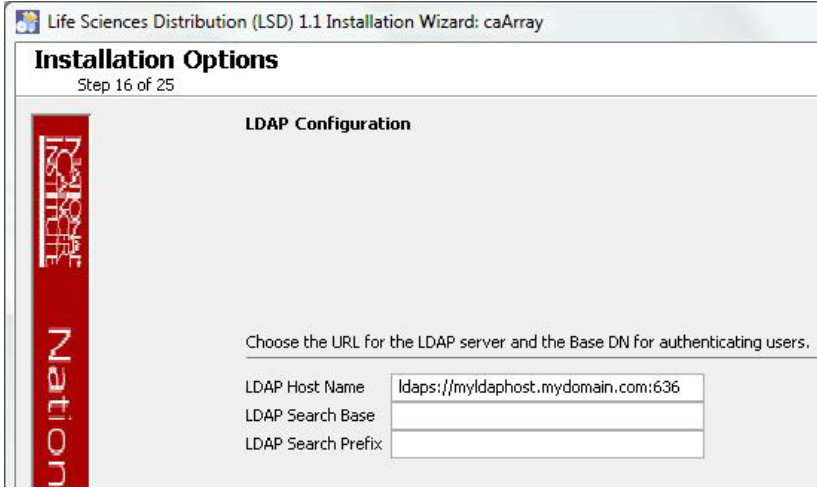
See the steps below for more information.

Upgrade Using the GUI Installer

For detailed information on all of the GUI installer fields, refer to the documentation at this location: <https://wiki.nci.nih.gov/x/NAUuAQ>.

To perform an upgrade to calIntegrator 1.3 using the GUI Installation Wizard, follow these steps:

Step	Action
1	<p>Because of the application name change in v.1.3, in the JBOSS home directory, locate the war file containing the previous release of calIntegrator2 and delete it. For example, find this file: <code>JBOSS_HOME/server/deploy/caintegrator2.war</code> and delete the file named <code>caintegrator2.war</code>.</p> <p>NOTE: In this same directory, there is a different file named <code>caintegrator.war</code> (without the number 2 in the name) which you should not delete.</p>
2	<p>Open a command prompt in the directory where you downloaded the <code>caIntegrator2_gui_distribution_1_3.jar</code> and invoke the GUI installer using this: <code>java -jar caIntegrator2_gui_distribution_1_3.jar</code>.</p>

Step	Action
3	The Installation Wizard opens to facilitate the installation process. Click Next to proceed through the pages of the wizard, beginning with progressing past the Welcome page.
4	Review the release notes.
5	You must accept the license agreement to continue.
6	Select the Upgrade installation type.
7	Configure the JBoss Server-related upgrade settings. If the path pointing to the caIntegrator installation to be upgraded is incorrect, an error message appears.
8	Specify the authentication type that caIntegrator is using. If you choose LDAP, configure the LDAP information. 
9	Review the summary of gathered information.
10	Click Next to proceed through the next two pages. Review the selected upgrade installation type and the upgrade destination.
11	After you click Next from reviewing the installation destination, the installer runs. The installation wizard displays the installation progress and completion. When you are informed that the process is finished, click Done in the lower right corner to close the installation wizard.

Step	Action
12	To verify calIntegrator installation, open your web browser to <code>http://<jboss.server.hostname>:<jboss.server.port>/caintegrator</code> (example: http://hostname:47210/caintegrator) and enter ncimanager as the user and changeme as the password. Refer to the original <code>install.properties</code> for the correct <code>jboss.server.hostname</code> and <code>jboss.server.port</code> values.
13	Restart your JBoss 4.0.5 server for the changes to take effect. The method of doing this may depend on the start/stop/restart scripts you created after the installation. Most commonly, you can execute <code>shutdown.bat</code> and then <code>run.bat</code> under <code>\$JBOSS_HOME/bin</code> . Refer to the publicly available JBoss user's guide at www.jboss.org for more information.


Upgrade Using Command-Line Installer

To perform an upgrade to calIntegrator 1.3 using the command-line, follow these steps:

Step	Action
1	<p>Because of the application name change in v.1.3, in the JBOSS home directory, locate the war file containing the previous release of calIntegrator2 and delete it. For example, find this file:</p> <p><code>JBOSS_HOME/server/deploy/caintegrator2.war</code> and delete the file named <code>caintegrator2.war</code>.</p> <p>NOTE: In this same directory, there is a different file named <code>caintegrator.war</code> (without the number 2 in the name) which you should not delete.</p>
2	<p>From the directory where you downloaded the upgrade zip file, extract the files, using one of these two methods:</p> <ol style="list-style-type: none"> Open a command prompt and use it to extract this file to a temporary location. For example, you may enter a command such as <code>unzip -q caIntegrator2_upgrade_1_3.zip</code>. (You must have a ZIP tool installed). <p>Note: It is recommended that you use a new directory for the unzipped files, rather than the one you used to unzip the installer for the previous version(s) of calIntegrator. This location will be referred to as the <code><upgrade_installer_directory></code> henceforth.</p> <ol style="list-style-type: none"> Use WinZip or a similar utility to unzip the files to a temporary location. This location will be referred to as the <code><upgrade_installer_directory></code> henceforth <p>Example <code><upgrade_installer_directory> = C:\caintegrator2_1_2_upgrade_installer</code></p>

Step	Action
3	<p>Edit the default properties in the <code><upgrade_installer_directory>/upgrade.properties</code> file. Before doing so, review the Working with Properties Files section on page 7.</p> <p>To do so, open both properties files, the one you configured originally when you installed the previous version of caintegrator2_1.1. (<code><install_properties_file></code>) and the <code><upgrade_installer_directory>/upgrade.properties</code> file.</p> <p>For the latest details about configuring the properties for your updated environment, refer to this wiki page: https://wiki.nci.nih.gov/x/MBKy</p> <p>Note: The <code>upgrade.properties</code> file does not have as many attributes, so you will not need to transfer all values you sent in the previous installation file.</p>
4	<p>Record these property values.</p> <p>Note: You shouldn't need to modify the other default values as we have chosen unique ports to reduce the risk of other applications using the same values. However, be sure to check the <code>*.properties</code> to verify that the ports in this file are not being used by other applications.</p>
5	<p>From the command line, navigate to <code><upgrade_installer_directory>/</code> (<i>Example:</i> <code>cd C:\caIntegrator_upgrade_installer</code>), and type ant. This initiates the upgrade process. The anticipated duration is anywhere 1-15 minutes depending on your system's speed, power and memory.</p> <p>The installer upgrades your existing caIntegrator database on your MySQL server, and starts your existing JBoss server.</p> <p>Notes regarding upgrade:</p> <p>When the installer detects that a database exists, it warns you to back it up, which you were instructed to do earlier in this process. Press Y to proceed.</p>
6	<p>To verify caIntegrator installation, open your web browser to <code>http://<jboss.server.hostname>:<jboss.server.port>/caintegrator</code> (example: http://hostname:47210/caintegrator) and enter ncimanager as the user and changeme as the password. Refer to the original <code>install.properties</code> for the correct <code>jboss.server.hostname</code> and <code>jboss.server.port</code> values.</p>
7	<p>Restart your JBoss 4.0.5 server for the changes to take effect. The method of doing this may depend on the start/stop/restart scripts you created after the installation. Most commonly, you can execute <code>shutdown.bat</code> and then <code>run.bat</code> under <code>\$JBoss_HOME/bin</code>. Refer to the publicly available JBoss user's guide at www.jboss.org for more information.</p>


Configuring JBoss

<p>NOTE</p> 	<p>For optimal performance, you must modify your JBoss 4.0.5 configuration to increase the amount of available memory for the caIntegrator application. Directions for doing this in Windows are in the following step 1.</p>
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To configure JBoss in Windows, follow these steps.


Step	Action
1	<p>Modify the following entry to the JBoss <code>run.bat</code> file which is located at <code><application_root_directory>/jboss-4.0.5.GA/bin/run.bat</code>. Find the line that begins with <code>"set JAVA_OPTS= -Dbda=bda -Dprogram.name=%PROGNAME% -server"</code>, modify the <code>"-Xms256m -Xmx512m"</code> to read <code>"-Xms4096m -Xmx4096m"</code>.</p> <p>Note: If 4096m is higher than the physical memory on the machine, then performance could be severely impacted with performance degradation and errors. 4096m of physical memory is recommended.</p> <p>Warning: Be careful when copying and pasting from this document, whether PDF or MS Word. No spaces must come before and after the columns. A safe way to ensure that the text has no unwanted space and unwanted characters is to copy the text into a blank text editor such as NotePad first. Then you can correct the spacing and copy-paste back into the <code>run.bat</code> file.</p>
2	<p>Restart your JBoss 4.0.5 server for the changes to take effect. The method of doing this may depend on the start/stop/restart scripts you created after the installation. Most commonly, you can execute <code>shutdown.bat</code> and then <code>run.bat</code> under <code>\$JBoss_HOME/bin</code>. Refer to the publicly available JBoss user's guide at www.jboss.org for more information.</p>

Configuring JBoss Servers and MySQL Server to Run as Services

<p>NOTE</p> 	<p>MySQL and the JBoss server that make up calIntegrator, and the JBoss server optionally installed for UPT, must run continually as services. The instructions in this section cover all of these scenarios. For a calIntegrator deployment, there are at least three servers, and if UPT is installed, four servers:</p> <ul style="list-style-type: none"> • JBoss 4.0.4 for UPT (optional) • JBoss 4.0.5 (for calIntegratorapplication) • MySQL 5.0.45
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Running JBoss as a Service


<p>BEFORE RUNNING JBOSS</p> 	<p>Before starting the calIntegrator JBOSS server, change the default location for user data. User data consists of various files that are saved by calIntegrator during the deployment and querying of studies. The default location for user data should be changed via the <code>Djava.io.tmpdir</code> jvm parameter in the <code>jboss run.conf</code> file.</p> <p>Example jvm parameter: - <code>Djava.io.tmpdir=/local/content/caintegrator/jvmtmp</code></p>
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<p>NOTE</p> 	<p>The default calIntegrator installation runs JBoss as a command line process using the user currently logged on. Therefore, when you log out as this user, JBoss will no longer be available for calIntegrator. For that reason, it is recommended that you configure your JBoss servers to run as a Linux or Windows service. The instructions are contained in this section.</p>
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To run JBoss as a service, follow these steps:

Step	Action
1	<p>Linux</p> <p>See http://wiki.jboss.org/wiki/Wiki.jsp?page=StartJBossOnBootWithLinux.</p>
2	<p>Windows</p> <p>To run an existing JBoss command line installation as a service, follow the directions for creating a user-defined service at http://support.microsoft.com/kb/137890/EN-US/</p> <p>Note: You need to have access to the Windows Resource Kit.</p>

Running MySQL as a Service

<p>NOTE</p> 	<p>It is assumed that your MySQL server was installed as a service. If it was not, follow these recommendations for installing this server as a service.</p>
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To run MySQL as a service, follow these steps:

Step	Action
1	<p>Linux</p> <p>See http://www.redhat.com/docs/manuals/enterprise/RHEL-AS-2.1-Manual/cluster-manager/s1-service-mysql.html.</p>
2	<p>Windows</p> <p>When installing MySQL server on Windows, choose the option to run MySQL as a Windows service.</p>

Post-Installation Tasks

Using UPT to Administer caIntegrator Users

To add and administer caIntegrator users in the UPT, refer to Chapter 6 in the caIntegrator version 1.3 User's Guide, located here:

<https://wiki.nci.nih.gov/display/caIntegrator2/caIntegrator2+-+User+Guide>

Appendix I: Default Users

The following users are provided by default by the caIntegrator installer.

- ncimanager / changeme
 - nciinvestigator / changeme
 - cai2admin / changeme - This is the UPT user who will have access to provision caIntegrator users.
-

Contacting Application Support

NCICB	http://ncicb.nci.nih.gov/NCICB/support
Application	Telephone: 301-451-4384
Support	Toll free: 888-478-4423