

2 - calIntegrator 1.4 and 1.4.x Software and Technology Requirements

This page includes the following topics:

- [Operating System](#)
- [Required Software Not Included in calIntegrator](#)
- [Java SDK Installation](#)
- [Apache Ant Installation](#)
 - [Apache Ant Environment Variables](#)
 - [Linux](#)
 - [Verifying the Environment Variables in Linux](#)
 - [Windows](#)
 - [Verifying the Environment Variables in Windows](#)
- [MySQL Installation and Configuration](#)

 **Differences between v. 1.4 and 1.4.x**

The only differences between installing versions 1.4 and 1.4.x are in upgrading the application. See the description in [Upgrading to calIntegrator 1.4.x](#). All other content in this installation guide applies to both versions 1.4 and 1.4.x.

Operating System

The calIntegrator v.1.4 and 1.4.x installations have been tested on Linux Red Hat Enterprise Linux AS 5 and 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.

 **File descriptors**

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 calIntegrator v.1.4 or 1.4.x installation. However, prior to the installation, you must download and install the following required tools and recommended versions in the order they are listed in the table. The software name, version, description, and URL hyperlinks (for download) are indicated in the table. Complete the directions for installing each, as directed on the corresponding website.

Required Software Name and Version	Description
Java 2 Platform Standard Edition 6.0 Update 31 (J2SE 6.0) .  Be sure to download the correct Java SDK for your operating environment. For example, for Linux AMD 64, you would download jdk for Linux, <code>linux-amd64-rpm.bin</code> . For Windows, you might download jdk for Windows, <code>windows-i586-p.exe</code> .	The J2SE Development Kit (JDK) supports creating J2SE applications.
Apache Ant, 1.8.2 	Apache Ant is a Java-based build tool.
MySQL, 5.1.x 	MySQL is an open-source database software application.

 **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



Reason for setting variables

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



Variables in Linux

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.

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

1. As the root user, enter the following in the /etc/profile file. A PATH variable should already be created in this file, so be sure to define the JAVA_HOME and ANT_HOME export before the PATH export. Replace <some_path> with the correct path fragment for Java and Ant installations.

```
export JAVA_HOME=<some_path>/jdk1.6.0_31
export ANT_HOME=<some_path>/apache-ant-1.8.2 ;
export PATH=$JAVA_HOME/bin:$ANT_HOME/bin:$PATH
```
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:

1. From the command line, enter:

```
echo $JAVA_HOME
echo $ANT_HOME
```

Both of these commands should return the location where you installed these tools.
2. To verify your Java SDK installation, enter **java --version** from a command prompt. You should see java version "1.6.0_31".
3. To verify your Ant installation, enter: **ant --version** from a command prompt. You should see: Apache Ant version 1.8.2

Windows

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



Variables in Windows

The JAVA_HOME, ANT_HOME and PATH environment variables are set in the system properties.

1. In Windows, select **Control Panel**, then select the **System** application. In the System Properties 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 **JAVA_HOME**.
 - 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 **ANT_HOME**.
 - 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.
5. In the Variable value text box, prepend the following text in front of the text that already exists in the **Variable Value** field.

```
%JAVA_HOME%\bin;%ANT_HOME%\bin;
```
6. Click **OK**.

Verifying the Environment Variables in Windows

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

1. From the command line, enter:

```
echo %JAVA_HOME% *
echo %ANT_HOME% *
```

Both of these commands should return the location where you installed these tools.
2. To verify your Java SDK installation, enter **java --version** from a command prompt. You should see java version "1.6.0_31".
3. To verify your Ant installation, enter **ant --version**



Other environment variables

Environment variables for calIntegrator and, optionally, UPT are modified and set in those sections of this document: [Installing a New calIntegrator v.1.4 or 1.4.x](#) and [Downloading and Installing UPT - Optional](#).

MySQL Installation and Configuration

A MySQL 5.1 server must be downloaded, installed and running in order for the calIntegrator installation to work successfully.

To download and install MySQL, follow the steps outlined on the [MySQL website](#)



Tip

You should consult the following three links to successfully set up secure and well-performing MySQL servers, in preparation for installing calIntegrator:

- [MySQL Security Guide](#)
- Performance
 - [InnoDB engine performance tuning](#)



More Tips

- Record the MySQL root username/password chosen during the MySQL installation process, as you will need to use this as your `database.system.user/ database.system.password` 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 `database.port` later in both the calIntegrator and UPT (if installing UPT) installation processes.