

CABENCH-TO-BEDSIDE V2.0

Installation Guide

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caBIG™ cancer Biomedical
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Chapter 1 Introduction

This document describes the process to install caB2B client and server.

The **caB2B client** is a desktop application which enables you to perform the following actions:

1. Query for data from disparate data sources over the caGrid
2. Select interesting data from the query results and add it to an Experiment
3. Analyze and visualize data using analytical services available over the caGrid

The **caB2B server** caters to multiple caB2B clients and connects to the caGrid to utilize the caGrid resources. It also communicates with the local MySQL database which stores the metadata for different data services and Experiment related data.

Chapter 2 References

caB2B G-Forge link

<https://gforge.nci.nih.gov/projects/cab2b/>

caB2B Java Web Start link

<http://cab2b.wustl.edu/cab2b/>

JBoss

http://sourceforge.net/project/showfiles.php?group_id=22866&package_id=16942&release_id=254646

MySQL download

<http://dev.mysql.com/downloads/mysql/4.1.html>

Ant 1.6.x

<http://ant.apache.org/antnews.html>

Chapter 3 Client Installation

You can install caB2B client either using the client installation Zip file or using the caB2B client URL (Java Web Start URL).

It is recommended that you should use the Java Web Start URL instead of directly installing caB2B using the installation zip. This is because using the Java Web Start technology you will be able to receive latest updates to caB2B automatically without having to manually upgrade the software.

Prerequisites

JRE version 1.05_07 should be installed and used by default.

How to install caB2B client using Java Web Start?

1. Use this option if you are going to connect to the caB2B server deployed at Washington University.
2. Go to caB2B Web Start link <http://cab2b.wustl.edu/cab2b/> and click on image above "Client Installer (Java Web Start)" to install.
3. You may see security warning window indicating *"The application's digital signature is invalid. Do you want to run the application?"* The reason for this warning is cab2b-jars are signed with self generated certificates and not from any security authorities. Select run to continue to the application.
4. Select the option for creating the shortcut to launch the application so that you do not have to go to web link every time. Instead you can click on the caB2B shortcut on your desktop.

How to run caB2B client using installation zip file?

1. Use this option if you are going to connect to a caB2B Server deployed locally at your institution.
2. Unzip cab2bClientSetup.zip in to a folder, say C:/cab2b/ (here after referred as <client_home>).
3. Configure the properties file <client_home>/conf/cab2b.properties
 - By default the properties are configured to connect to the caB2B Server at Washington University.
 - Set the parameters caB2B.server.ip, caB2B.server.port to configure caB2B server you want to connect. For example, if you want to connect to server running at cab2b.wustl.edu and its JNDI service port is 1099 entries in property file should be

caB2B.server.ip=cab2b.wustl.edu

caB2B.server.port=1099

- Set the URLs for the caGrid data services that you want the caB2B client to query.

Note: For the caB2B client to query a data service, the metadata for the data service should be present in the caB2B server. Please contact your caB2B server administrator to verify if the caB2B server supports the application you want to query. For example, if you want to configure URL for GeneConnect data service deployed at Washington University, set the **ServiceURL** to

<http://128.252.227.94:9092/wsrf/services/cagrid/GeneConnect>

4. To launch the caB2B client:
 - From Windows machines, double click on <client_home>\run.bat
 - From Linux machines, execute <client_home>\run.sh
 - For any other OS, use the command `java -Xmx256m -jar cab2bClient.jar`
5. The log files can be located in the folder <client_home>\log\, say C:\cab2b\log\

Chapter 4 Server Installation

Prerequisites

- JDK 1.5.07
- JBoss 4.0.0
- MySQL 4.1.10
- Ant 1.6.x

How to install caB2B server?

Verify required tools

Verify Java and Ant is installed on your machine. Refer to sections [Verify java installation](#) and [Verify ant installation](#). Verify that the MySQL database server is up and running.

Unzip **cab2bInstaller.zip** in to a folder, say C:/cab2b/ (here after referred as **<home_dir>**).

Configure the following properties in **<home_dir>/conf/server.properties**

jboss.home	Set this to the directory where JBoss is installed. For example, jboss.home=D:/jboss-4.0.0/
database.server.ip	IP address of the machine on which the MySQL database is installed For example, database.server.ip=22.44.55.66
database.server.port	Port on which the MySQL database is deployed For example, database.server.port=3306
database.name	Name of the MySQL database For example, database.name=cab2bDatabase Note: During the installation process this database will be created if it does not exist. If it is an existing database, then the install process will recreate the database.
database.username	User name to connect to the caB2B database. Note: This user must have delete and drop permissions in the caB2B database.
database.password	Password for the caB2B database user.

Configuring **<home_dir>/conf/cab2b.properties**

To support any data service, you have to load its metadata into the caB2B server's database. These details are provided in the configuration file cab2b.properties.

1. Open the file **<home_dir>/conf/cab2b.properties** in any text editor.
2. If you want to load metadata for applications say "app1" and "app2" then

all.applications= app1, app2

app1.ModelPath=<Model path for app1>

app2.ModelPath=<Model path for app2>

For example, to load metadata for caArray and caTissue, the cab2b.properties will look like

all.applications=caArray,caTissue

caArray.ModelPath=c:/caArrayModel.xml

caTissue.ModelPath=c:/caTissueModel.xml

Run command “ant install.server”

1. Open command prompt and go to directory <home_dir>/build
2. Run command “ant install.server”
3. This will invoke Ant target to install caB2B server. This takes several minutes depending on the configurations. During the process, following steps are executed
 - a. Create database: You may see some SQL errors if you are installing it for the first time. Ignore those.
 - b. Loading metadata to caB2B database (Metadata Repository).
 - c. Finding all possible paths present in each model and across models.
 - d. Deploying caB2B application in Jboss.

Start JBoss Application Server

- We recommend 1GB memory for cab2b-server. This can be done by setting - **Xms512m -Xmx1024m** java options in run.bat / run.sh
- If your application server is running behind the firewall, you need to modify run.bat / run.sh to provide proxy authentication. This can be done by setting following java options

-Dhttp.proxyHost=your.proxy.host

-Dhttp.proxyPort=your.proxy.port

-Dhttp.nonProxyHosts=list of local IPs

-Dhttp.proxyUser=proxy.user.name

-Dhttp.proxyPassword=password

For public machines these settings are not needed.

- Once the “ant install.server” command is successfully executed, start the Jboss by using the <Jboss_home>/bin/run.bat.

To setup caB2B Web Start link specific to a caB2B Server

If you deploy your own cab2b-server, you can also setup the distribution of the caB2B client via Web Start.

How to create war file for web start installation?

1. Download latest **cab2bInstaller.zip** from G-Forge. Suppose `<home_dir>` represents root directory of caB2B installer code. That is it will have directories like "build", "conf" inside it.
2. Edit `<home_dir>/webstart/webstart.properties` to specify the host IP and port of your web server. E.g. if your web server is on machine cab2b.wustl.edu running at port 8080, property file entries will look like

`webstart.server.host= cab2b.wustl.edu`

`webstart.server.port=8080`

3. Configure the `<user.home>/conf/cab2b.properties` as mentioned in section [How to run caB2B client using installation zip file?](#)

`<user.home>` is the directory specified by Java's "user.home" system property. On Windows 2000 and XP, the "user.home" directory in most cases corresponds to the environment variable `%USERPROFILE%`, e.g. "C:\Documents and Settings\User".

On Unix/Linux systems, the "user.home" directory in most cases correspond to the `$HOME` environment variable (e.g. `"/home/username"`).

4. In command line, go to the `<source>/build` directory and run command
`ant build.client.webstart.war`. This will create `<source_dir>/workarea/cab2b.war` file.

5. Deploy this war file into your web server.
For Jboss, put the file into `<JBoss_home>/server/default/deploy/`.
For Tomcat, put the file into `<tomcat_home>/webapps/`.
For other web servers please go through its application deployment guide.

6. Start the server

7. Now you can install caB2B client from
<http://<webserver-host-ip>:<webserver-port>/>

For Example, `http://cab2b.wustl.edu:8080/`

Chapter 5 Appendix

Verify ant installation

Make sure that you have Apache-ant-1.6.x and its “bin” directory is in PATH. To verify it run command **ant** from any directory and it should not report it as invalid command. If you don't have ANT, it can be downloaded from <http://archive.apache.org/dist/ant/binaries/>. Also make sure that ANT_HOME\lib directory contains junit jar file. If this file is not present, executing a target will give you error **“taskdef A class needed by class org.apache.cactus.integration.ant.CactusTask cannot be found: junit/framework/Test”**

Verify java installation

You need to have java 1.5.07 on your system. To check java, run command **java -version** from any directory and its response should be like *java version "1.5.0_07"...*
JDK-JRE can be downloaded from <http://java.sun.com/>