

Required Software for i2b2

1.1.1 Java JDK

1. Download latest version of Java JDK and make sure that execute permissions are set

```
% chmod +x jdk-6u27-linux-x64.bin
```

2. Change directory to the location where you would like the files to be installed.

```
% cd /opt/java
```

3. Execute the downloaded file:

```
% ./jdk-6u27-linux-x64.bin
```

The binary code license is displayed, and you are prompted to agree to its terms. The Java Development Kit files are installed in a directory called `jdk.6.0_<version>` in the current directory.

4. Delete the bin file if you want to save disk space.

```
% rm jdk-6u27-linux-x64.bin
```

5. Install java as the alternative.

```
% alternatives --install /usr/bin/java java  
/opt/java/jdk1.6.0_27/bin/java 3
```

```
% alternatives --config java
```

1.1.2 JBoss 4.2.2.GA

1. Unzip `jboss-4.2.2.GA.zip` into `/opt/jboss-4.2.2.GA`

```
% unzip jboss-4.2.2.GA.zip -d /opt
```

2. Set JBoss JVM to run with 1GB of extended memory. Edit `/opt/jboss-4.2.2.GA/bin/run.conf` and change the `JAVA_OPTS` memory setting to those shown below.

```
#  
# Specify options to pass to the Java VM.  
#  
If ["x$JAVA_OPTS" = "x"]; then  
    JAVA_OPTS = "-Xms512m -Xmx1024m  
-Dsun.rmi.dgc.client.gcInterval=3600000  
-Dsun.rmi.dgc.server.gcInterval=3600000"
```

3. Change the non-SSL HTTP/1.1 Connector from 8080 to port 9090 and change the AJP 1.3 Connector from 8009 to 9009.

```
% vim /opt/jboss-4.2.2.GA/server/default/deploy/jboss-  
web.deployer/server.xml
```

4. Update the run permissions of the JBoss startup scripts.

```
% chmod 775 /opt/jboss-4.2.2.GA/bin/*.sh
```

5. Copy the 'jboss' startup script to the directory /etc/init.d (see script below in Appendix section).
6. Change to the /etc/init.d directory

```
% cd /etc/init.d
```

7. Run the following commands to add 'jboss' to the services.

```
% chmod +x jboss
```

```
% chkconfig --add jboss
```

```
% chkconfig jboss on
```

1.1.3 Apache Ant 1.6.5

1. Unzip Apache Ant 1.6.5.

```
% unzip apache-ant-1.6.5-bin.zip -d /opt
```

2. Update Environment Variables.

```
% vim /etc/profile
```

```
# The following are the environment variables for Java, ANT and  
JBoss
```

```
JAVA_HOME=/opt/java/jdk1.6.0_27
```

```
ANT_HOME=/opt/apache-ant-1.6.5
```

```
JBOSS_HOME=/opt/jboss-4.2.2.GA
```

```
PATH=$PATH:$ANT_HOME/bin:$JAVA_HOME/bin
```

```
export JBOSS_HOME
```

```
export ANT_HOME
```

```
export JAVA_HOME
```

3. Restart the server and verify JBOSS is running by opening a browser to <http://localhost:9090> and hit refresh.

1.1.4 *Apache Axis2 1.1*

1. Create a folder called i2b2.war

```
% mkdir /opt/jboss-4.2.2.GA/server/default/deploy/i2b2.war
```

2. Unzip axis2.war

```
% cd /opt/jboss-4.2.2.GA/server/default/deploy/i2b2.war
```

```
% jar -xvf /root/Downloads/axis2.war
```

1.1.5 *Apache*

1. Start apache httpd.

```
% cd /etc/init.d
```

```
% chkconfig --add httpd
```

```
% chkconfig httpd on
```

1.1.6 *PHP*

1. Install PHP.

```
% yum install php
```

Appendix

Example of the jboss script:

```
#!/bin/sh
#
# $Id: jboss_init_redhat.sh 60992 2007-02-28 11:33:27Z dimitris@jboss.org $
#
# JBoss Control Script
#
# To use this script run it as root - it will switch to the specified user
#
# chkconfig: 3 80 20
# description: JBoss EJB Container
#
# Here is a little (and extremely primitive) startup/shutdown script
# for RedHat systems. It assumes that JBoss lives in /usr/local/jboss,
# it's run by user 'jboss' and JDK binaries are in /usr/local/jdk/bin.
# All this can be changed in the script itself.
#
# Either modify this script for your requirements or just ensure that
# the following variables are set correctly before calling the script.

#define where jboss is - this is the directory containing directories log,
bin, conf etc
JBOSS_HOME=${JBOSS_HOME:-"/opt/jboss-4.2.2.GA"}

#define the user under which jboss will run, or use 'RUNASIS' to run as the
current user
JBOSS_USER=${JBOSS_USER:-"jboss"}

#make sure java is in your path
JAVAPATH=${JAVAPATH:-"/opt/java/jdk1.6.0_27"}

#define the classpath for the shutdown class
JBOSSCP=${JBOSSCP:-"$JBOSS_HOME/bin/shutdown.sh -S"}

#define the script to use to start jboss
JBOSSSH=${JBOSSSH:-"$JBOSS_HOME/bin/run.sh -b 0.0.0.0"}

if [ "$JBOSS_USER" = "RUNASIS" ]; then
    SUBIT=""
else
    SUBIT="su - $JBOSS_USER -c "
fi

if [ -n "$JBOSS_CONSOLE" -a ! -d "$JBOSS_CONSOLE" ]; then
    # ensure the file exists
    touch $JBOSS_CONSOLE
    if [ ! -z "$SUBIT" ]; then
        chown $JBOSS_USER $JBOSS_CONSOLE
    fi
fi

if [ -n "$JBOSS_CONSOLE" -a ! -f "$JBOSS_CONSOLE" ]; then
    echo "WARNING: location for saving console log invalid: $JBOSS_CONSOLE"
    echo "WARNING: ignoring it and using /dev/null"
```

```

    JBOSS_CONSOLE="/dev/null"
fi

#define what will be done with the console log
JBOSS_CONSOLE=${JBOSS_CONSOLE:-"/dev/null"}

JBOSS_CMD_START="cd $JBOSS_HOME/bin; $JBOSSSSH"
JBOSS_CMD_STOP=${JBOSS_CMD_STOP:-"java -classpath $JBOSSCP org.jboss.Shutdown
--shutdown"}

if [ -z "`echo $PATH | grep $JAVAPTH`" ]; then
    export PATH=$PATH:$JAVAPTH
fi

if [ ! -d "$JBOSS_HOME" ]; then
    echo JBOSS_HOME does not exist as a valid directory : $JBOSS_HOME
    exit 1
fi

echo JBOSS_CMD_START = $JBOSS_CMD_START

case "$1" in
start)
    cd $JBOSS_HOME/bin
    export LAUNCH_JBOSS_IN_BACKGROUND=1
    $JBOSSSSH &
    echo $! >$JBOSS_PIDFILE
    ;;
stop)
    $JBOSSCP
    ;;
restart)
    $0 stop
    $0 start
    ;;
*)
    echo "usage: $0 (start|stop|restart|help)"
esac

```