

Appendix B: i2b2 Installation Checklist

This checklist is designed to assist you in the installation of the i2b2 Server and Clients. It is organized to coincide with the installation chapters. The items appear in the checklist in the order in which they need to occur during the installation.

Note

This checklist is not a replacement for the i2b2 Installation Guide. The guide itself contains detailed information, important notes and warnings as well as helpful tips.

INSTALLATION OVERVIEW

Environment:	<i>Demo / Test / Production / Other</i>	Version of i2b2:	
Domain ID:		Domain Name:	
Setup Date:		Setup By:	

INSTALLATION ORDER AND RESOURCES

Installation Order	Checklist Name	Install Guide Resource
1. System and Software Requirements	Requirements Checklist	Chapter 2. Requirements
2. Data Installation	Data Checklist	Chapter 3. Data Installation
3. Deploying the server-common	Server-Common Checklist	Chapter 4. i2b2 Server-Common Install
4. PM Cell Installation	PM Checklist	Chapter 5. Project Management (PM) Cell Install
5. i2b2 Admin Installation	i2b2 Admin Checklist	Chapter 6. i2b2 Administration Module Install
6. i2b2 Web Client Installation	i2b2 Web Client Checklist	Chapter 7. i2b2 Web Client Install
7. i2b2 Workbench Installation	i2b2 Workbench Checklist	Chapter 8. i2b2 Workbench Install

8. ONT Cell Installation	ONT Checklist	Chapter 9. Ontology Management (ONT) Cell Install
9. CRC Cell Installation	CRC Checklist	Chapter 10. Data Repository (CRC) Cell Install
10. WORK Cell Installation	WORK Checklist	Chapter 11. Workplace (WORK) Cell Install
11. FR Cell Installation	FR Checklist	Chapter 12. File Repository (FR) Cell Install
12. IM Cell Installation	IM Checklist	Chapter 13. Identity Management (IM) Cell Install
13. Setting up i2b2	Initial i2b2 Setup Checklist	Chapter 14. Initial Setup of i2b2 in Admin

THINGS TO KEEP IN MIND

For the most part the installation of the different i2b2 Core Cells involves steps that are very similar. For instance, they all have a build.properties file where you will need to set the *jboss.home* and *axis2.war.name* properties for the cell you will be deploying.

Based on feedback provided by our users, a common area for confusion and errors seems to be around the configuration of the data sources for each cell. Here are some things to keep in mind that will hopefully eliminate or at least minimize any confusion around defining your datasources.

1. The PM, ONT, CRC, WORK, and IM cells each have a ds.xml file that needs to be updated before deploying the cell. (*pm-ds.xml*, *ont-ds.xml*, *crc-ds.xml*, *work-ds.xml*, and *im-ds.xml*)
2. At least two **datasources** have to be defined in the ds.xml files for the ONT, CRC, WORK, and IM Cells.
 - The **BootstrapDS** datasource points to the DB_LOOKUP tables that are part of the Hivedata tables.
 - The **DemoDS** datasource points to the tables for the cell you are configuring.
3. The PM Cell has only one datasource (*PMBootstrapDS*) defined and it points to the location of the **Pmdata** tables.

 **Note**

Depending on how you have setup your database environment the Pmdata tables may or may not be in the same location as your Hivedata tables.

4. The **<connection-url>** for every *<datasource>* defined in each ds.xml file needs to be updated with information that is specific to your environment.
 - Update the *<connection-url>* with the correct JDBC information for your type of database.
 - The address in the URL needs to point to either the location of your hivedata tables (*BoostratpDS*) or the tables for your cell (*DemoDS*).
5. The **<driver-class>** and **<driver>** for each *<datasource>* needs to be defined correctly for the type of database you are connecting to.

 **Important**

Depending on your environment, the default of *localhost* may not be appropriate for you. Some systems require the I.P. address instead of the alias name.

6. The **<username>** and **<password>** for each *<datasource>* needs to match the database users you setup during the data installation.

The following table shows the usernames and passwords for the i2b2 demo environment.

Data Package	Cell Owner	Database / Schema Name	User Name	Password
Crcdata	Data Repository (CRC)	i2b2demodata	i2b2demodata	demouser
Hivedata	Project Management (PM)	i2b2hive	i2b2hive	demouser
Imdata	Identity Management (IM)	i2b2imdata	i2b2imdata	demouser
Metadata	Ontology Management (ONT)	i2b2metadata	i2b2metadata	demouser
Pmdata	Project Management (PM)	i2b2pm	i2b2pm	demouser
Workdata	Workplace (WORK)	i2b2workdata	i2b2workdata	demouser

 **Tip**

Obviously the passwords and possible the usernames will be different for those databases that contain your real patient data. The **Install Worksheet** (*Appendix A*) can be used to document and organize the settings for your environment. The worksheet is particularly useful if you are setting up multiple environments and need to keep track of the settings for each environment.

7. Multiple projects with different data sources.

- Need to add an additional <datasource> section for each project data source.
- In addition to updating the connection-url, drivers and database user information you also need to update both the **jndi-name** and **pool-name** to reflect the name of the other projects.

 **Important**

Any changes made to a cell's ds.xml file **after** it has been deployed will require you to re-deploy the cell in order for the changes to take effect.

In addition to the ds.xml files, several cells have additional “data configurations” defined in their property files. These additional data configurations are typically defining the schema / database name and location of your Hivedata tables so the cells can lookup relevant information.

INSTALLATION CHECKLISTS

Requirements Checklist

Step	File Name or Comment	Completed
Database Requirements		
Installed a Database Management System supported by i2b2	<i>Oracle / PostgreSQL / SQLServer</i>	<input type="checkbox"/>
Browser Requirements		
Installed a web browser supported by i2b2	<i>Firefox / Internet Explorer / Safari</i>	<input type="checkbox"/>
i2b2 Server Requirements		
Installed Java JDK 7.0 on your i2b2 Server		<input type="checkbox"/>
Installed JBoss 7.1.1 Application Server on your i2b2 Server		<input type="checkbox"/>
Set JBoss logging level to INFO		<input type="checkbox"/>
Documented JBoss port; if other than 9090 then install scripts have to be updated		<input type="checkbox"/>
Setup JBoss to run as either a Linux or Windows service		<input type="checkbox"/>
Installed Apache Ant 1.8.2 on your i2b2 Server		<input type="checkbox"/>
Installed Apache Axis2 1.6.2 on your i2b2 Server		<input type="checkbox"/>
Set your system environment variables on your i2b2 Server		<input type="checkbox"/>
Web Server Requirements		
Installed cURL on your web server	<i>Only required for Linux Machines</i>	<input type="checkbox"/>
Installed IIS on your web server	<i>Only required for Windows Machines</i>	<input type="checkbox"/>
Installed Php: Hypertext Preprocessor on your web server	<i>Required for both Linux and Windows Machines</i>	<input type="checkbox"/>
i2b2 Software Requirements		
	<i>Downloaded zip files from i2b2.org</i>	
i2b2 data installation scripts		<input type="checkbox"/>
i2b2 core source code		<input type="checkbox"/>
i2b2 Web Client code		<input type="checkbox"/>
i2b2 Workbench application for Macintosh or Windows		<input type="checkbox"/>
i2b2 VMWare image of the i2b2 Core Server	<i>Optional</i>	<input type="checkbox"/>

Data Checklist

Step	File Name or Comment	Completed
Extracted the i2b2 data package to a directory of your choice	<i>YOUR_I2B2_DATA_DIR</i>	<input type="checkbox"/>
Created database user accounts for all the i2b2 schemas		<input type="checkbox"/>
Crcdata		
Set the database properties	db.properties	<input type="checkbox"/>
Created the Crcdata tables		<input type="checkbox"/>
Created the stored procedures		<input type="checkbox"/>
Loaded the data into the Crcdata tables	Type of data loaded: <i>i2b2 demo data or your local data</i>	<input type="checkbox"/>
Hivedata		
Set the database properties	db.properties	<input type="checkbox"/>
Created the Hivedata tables		<input type="checkbox"/>
Loaded the data into the Hivedata tables	Type of data loaded: <i>i2b2 demo data or your local data</i>	<input type="checkbox"/>
Imdata		
	Optional Cell	
Set the database properties	db.properties	<input type="checkbox"/>
Created the Imdata tables		<input type="checkbox"/>
Loaded the data into the Imdata tables	Type of data loaded: <i>i2b2 demo data or your local data</i>	<input type="checkbox"/>
Metadata		
Set the database properties	db.properties	<input type="checkbox"/>
Created the Metadata tables		<input type="checkbox"/>
Loaded the data into the Metadata tables	Type of data loaded: <i>i2b2 demo data or your local data</i>	<input type="checkbox"/>
Pmdata		
Set the database properties	db.properties	<input type="checkbox"/>
Created the Pmdata tables		<input type="checkbox"/>

Created the PM triggers		<input type="checkbox"/>
Loaded the data into the Pmdata tables	Type of data loaded: <i>i2b2 demo data or your local data</i>	<input type="checkbox"/>
Workdata		
Set the database properties	db.properties	<input type="checkbox"/>
Created the Workdata tables		<input type="checkbox"/>
Loaded the data into the Workdata tables	Type of data loaded: <i>i2b2 demo data or your local data</i>	<input type="checkbox"/>

Server-Common Checklist

Step	File Name or Comment	Completed
Extracted the i2b2 source code to a directory of your choice	<i>YOUR_I2B2_SRC_DIR</i>	<input type="checkbox"/>
Configured the build properties	build.properties	<input type="checkbox"/>
Deployed edu.harvard.i2b2.server-common		<input type="checkbox"/>

PM Checklist

Step	File Name or Comment	Completed
Configured the PM build properties	build.properties	<input type="checkbox"/>
Configured the datasources for the PM Cell	pm-ds.xml	<input type="checkbox"/>
Deployed edu.harvard.i2b2.pm		<input type="checkbox"/>
Verified the installation of the PM Cell		<input type="checkbox"/>

i2b2 Admin Checklist

Warning

The Admin Module and the Web Client each have their own folder that contains the necessary files to run the respective application. Both the admin and webclient folders contain files with similar names which can be a source of confusion. Therefore it is important to make sure you are editing the files in the **admin folder** and **not** the ones that reside in the webclient folder.

In addition to the above, you also want to make sure you are editing the admin files in your **webserver directory** and **not** the ones that reside in YOUR_I2B2_SRC_DIR.

Step	File Name or <i>Comment</i>	Completed
Copied Admin files to your web server directory		<input type="checkbox"/>
<i>Configured the Domain information for your Admin Module</i>	<i>See note at end of this table</i>	
Commented out or removed the pre-configured domain of <i>i2b2demo</i>	<i>See note at end of this table</i>	<input type="checkbox"/>
Added the domain information for your environment	<i>i.e. test and production</i>	<input type="checkbox"/>
Verified the installation of the i2b2 Admin		<input type="checkbox"/>

Note

The i2b2 Admin is pre-configured with the following domain information:

The **domain** is **i2b2demo**

The **URL** points to the **local PM** in your i2b2 demo environment

If you comment out or remove this domain then i2b2 will not work in your demo environment.

i2b2 Web Client Checklist

Warning

The Admin Module and the Web Client each have their own folder that contains the necessary files to run the respective application. Both the admin and webclient folders contain files with similar names which can be a source of confusion. Therefore it is important to make sure you are editing the files in the **webclient folder** and **not** the ones that reside in the admin folder.

In addition to the above, you also want to make sure you are editing the web client files in your **webserver directory** and **not** the ones that reside in YOUR_I2B2_WC_DIR.

Step	File Name or Comment	Completed
Extracted the i2b2 Web Client code to a directory of your choice	YOUR_I2B2_WC_DIR	<input type="checkbox"/>
Copied Web Client files to your web server directory		<input type="checkbox"/>
Configured the Proxy information for your environment		
Using the default PHP proxy file that is included with the i2b2 Software		<input type="checkbox"/>
Update security configurations in the PHP proxy		<input type="checkbox"/>
Verified the correct proxy is defined in the Web Client's config file (<i>i2b2_config_data.js</i>)		<input type="checkbox"/>
Not using the default PHP proxy file that is included with the i2b2 Software		<input type="checkbox"/>
Write your own proxy file		<input type="checkbox"/>
Update the urlProxy in the Web Client's config file to reflect the correct proxy (<i>i2b2_config_data.js</i>)		<input type="checkbox"/>
Configured the Domain information for your Web Client	See note at end of this table	
Commented out, or removed the default domain of <i>HarvardDemo</i>	Optional	<input type="checkbox"/>
Added the i2b2demo domain for your i2b2 demo environment		<input type="checkbox"/>
Added the domain information for your environment	<i>i.e. test and production</i>	<input type="checkbox"/>
Verified the installation of the i2b2 Web Client		<input type="checkbox"/>

Note

The i2b2 Web Client is pre-configured with the following domain information:

The **domain** is **HarvardDemo**

The **URL** points to the **public i2b2** on the i2b2.org site

If you comment out or remove this domain then the i2b2 Web Client will not be able to connect to the public i2b2 site.

i2b2 Workbench Checklist

Step	File Name or <i>Comment</i>	Completed
Extracted the i2b2 Workbench files to a directory of your choice	<i>YOUR_I2B2_WB_DIR</i>	<input type="checkbox"/>
Configured the Workbench properties with the location of your hive	i2b2workbench.properties	<input type="checkbox"/>
Verified the installation of the i2b2 Workbench		<input type="checkbox"/>

ONT Checklist

Step	File Name or <i>Comment</i>	Completed
Configured the Ontology build properties	build.properties	<input type="checkbox"/>
Configured the Ontology application directory properties	ontology_application_directory.properties	<input type="checkbox"/>
<i>Configured the following Ontology properties</i>	ontology.properties	
Set the Metadata Schema Name	<i>Location of the Hivedata tables</i>	<input type="checkbox"/>
Set the Project Management Cell Integration Properties	<i>Settings to locate and communicate with the PM Cell</i>	<input type="checkbox"/>
Set the File Management Cell Properties	<i>Settings to locate and communicate with the FRC Cell</i>	<input type="checkbox"/>
Set the CRC Cell Properties	<i>Settings to locate and communicate with the CRC Cell</i>	<input type="checkbox"/>

Set the Ontology Service Account Properties		<input type="checkbox"/>
Set the metadata delimiter property		<input type="checkbox"/>
Configured the data sources for the Ontology Cell	ont-ds.xml	<input type="checkbox"/>
Deployed edu.harvard.i2b2.ontology		<input type="checkbox"/>
Updated the ONT Cell Data in the i2b Admin Module		<input type="checkbox"/>
Verified the installation of the Ontology Cell		<input type="checkbox"/>

CRC Checklist

Step	File Name or <i>Comment</i>	Completed
Configured the CRC build properties	build.properties	<input type="checkbox"/>
Configured the CRC application directory properties	crc_application_directory.properties	<input type="checkbox"/>
<i>Configured the following CRC Loader properties</i>	edu.harvard.i2b2.crc.loader.properties	
Set the File Management Cell Properties	<i>Settings to locate and communicate with the FRC cell.</i>	<input type="checkbox"/>
Set the Project Management Cell Properties	<i>Settings to locate and communicate with the PM Cell</i>	<input type="checkbox"/>
Configured the datasource lookups for the CRC Loader	CRCLoaderApplicationContext.xml edu.harvard.i2b2.crc.loader.properties	<input type="checkbox"/>
<i>Configured the following CRC properties</i>	crc.properties	
Set the Project Management Cell Properties	<i>Settings to locate and communicate with the PM Cell</i>	<input type="checkbox"/>
Set the CRC Datasource Lookup Properties	<i>Location of your hivedata tables and the type of database</i>	<input type="checkbox"/>
Set the Ontology Cell Properties	<i>Settings to locate and communicate with the ONT Cell</i>	<input type="checkbox"/>
Set the CRC Service Account Properties		<input type="checkbox"/>
Set the PDO paging properties	<i>Optional performance property</i>	<input type="checkbox"/>
Set the Analysis plug-in: Queue properties	<i>Optional performance property</i>	<input type="checkbox"/>
Set the Setfinder query: Timeout properties	<i>Optional performance property</i>	<input type="checkbox"/>
Set the Setfinder query: Lockout properties	<i>Optional performance property</i>	<input type="checkbox"/>

Set the Setfinder query: Temp table properties	<i>Optional performance property</i>	<input type="checkbox"/>
Configured the data sources for the CRC Cell	crc-ds.xml	<input type="checkbox"/>
Deployed edu.harvard.i2b2.crc		<input type="checkbox"/>
Updated the CRC Cell Data in the i2b Admin Module		<input type="checkbox"/>
Updated the metadata key in the CRC Tables	<i>QT_BREAKDOWN_PATH table</i>	<input type="checkbox"/>
Verified the installation of the CRC Cell		<input type="checkbox"/>

WORK Checklist

Step	File Name or <i>Comment</i>	Completed
Configured the Workplace build properties	build.properties	<input type="checkbox"/>
Configured the Workplace application directory properties	workplace_application_directory.properties	<input type="checkbox"/>
<i>Configured the following Workplace properties</i>	workplace.properties	
Set the Metadata Schema Name	<i>Location of the Hivedata tables</i>	<input type="checkbox"/>
Set the Project Management Cell Integration Properties	<i>Settings to locate and communicate with the PM Cell</i>	<input type="checkbox"/>
Configured the data sources for the Workplace Cell	work-ds.xml	<input type="checkbox"/>
Deployed edu.harvard.i2b2.workplace		<input type="checkbox"/>
Updated the WORK Cell Data in the i2b Admin Module		<input type="checkbox"/>
Verified the installation of the Workplace Cell		<input type="checkbox"/>

FR Checklist

Step	File Name or <i>Comment</i>	Completed
Configured the File Repository build properties	build.properties	<input type="checkbox"/>
Configured the File Repository application directory properties	fr_application_directory.properties	<input type="checkbox"/>

Configured the following File Repository properties	edu.harvard.i2b2.fr.properties	
Set the Project Management Cell Integration Properties	<i>Settings to locate and communicate with the PM Cell</i>	<input type="checkbox"/>
Deployed edu.harvard.i2b2.fr		<input type="checkbox"/>
Updated the FRC Cell Data in the i2b Admin Module		<input type="checkbox"/>

IM Checklist

Step	File Name or <i>Comment</i>	Completed
Configured the IM build properties	build.properties	<input type="checkbox"/>
Configured the IM application directory properties	im_application_directory.properties	<input type="checkbox"/>
<i>Configured the following IM properties</i>	ontology.properties	
Set the Metadata Schema Name	<i>Location of the Hivedata tables</i>	<input type="checkbox"/>
Set the Project Management Cell Properties	<i>Settings to locate and communicate with the PM Cell</i>	<input type="checkbox"/>
Set the Patient in Project Property		<input type="checkbox"/>
Set the EMPI Service Properties	<i>Optional 3rd party EMPI Service</i>	<input type="checkbox"/>
Configured the data sources for the IM Cell	im-ds.xml	<input type="checkbox"/>
Deployed edu.harvard.i2b2.im		<input type="checkbox"/>
Updated the IM Cell Data in the i2b Admin Module		<input type="checkbox"/>

Initial i2b2 Setup Checklist

Step	File Name or <i>Comment</i>	Completed
<i>Hive Data Management</i>		
Updated the Help URL for your environment	<i>Optional</i>	<input type="checkbox"/>
Verified Domain Name is entered correctly in i2b2 Admin		<input type="checkbox"/>

Defined the type of environment		<input type="checkbox"/>
Cell Data Management		
Verified the information for each of your cells is entered correctly; particularly the cell id and cell url		<input type="checkbox"/>
Defined any <i>cell specific</i> parameters		<input type="checkbox"/>
User Management		
Entered at least one i2b2 user in i2b2 Admin		<input type="checkbox"/>
Defined any <i>user specific</i> parameters		<input type="checkbox"/>
Project Management		
Entered at least one project in i2b2 Admin		<input type="checkbox"/>
Defined any <i>project specific</i> parameters	<i>i.e. Unit Conversion for Numerical Observations or Enable Process Timing</i>	<input type="checkbox"/>
At least one user given access to the project and defined their level of access		<input type="checkbox"/>
Defined any <i>project-user</i> parameters		<input type="checkbox"/>
Setup i2b2 Authentication Method of Active Directory		
	Optional	
Added parameter for authentication method		<input type="checkbox"/>
Added parameter for PDC Domain of your NT domain		<input type="checkbox"/>
Added parameter for the connection URL of your NT domain		<input type="checkbox"/>
Setup i2b2 Authentication Method of LDAP		
	Optional	
Added parameter for authentication method		<input type="checkbox"/>
Added parameter for the connection URL of your LDAP server		<input type="checkbox"/>
Added parameter for search base		<input type="checkbox"/>
Added parameter for distinguished name		<input type="checkbox"/>
Added parameter for security authentication		<input type="checkbox"/>
Added parameter for ssl		<input type="checkbox"/>
Added parameter for security layer		<input type="checkbox"/>
Added parameter for privacy strength		<input type="checkbox"/>
Added parameter for max buffer		<input type="checkbox"/>